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ABSTRACT

Officials responsible for designing and introducing curriculum innovation in countries participating in the Asian Programme of Education Innovation for Development (APEID) met in Australia in September 1979 to exchange experiences and explore problems and issues of common interest. Conference participants, representing educational ministries or departments in Afghanistan, Australia, India, Indonesia, Japan, Malaysia, Nepal, Pakistan, Papua New Guinea, the Philippines, the Republic of Korea, Singapore, Sri Lanka, and Thailand, presented two papers apiece to the meeting. The first of these papers was an institutional profile outlining the structure and working methods of the national agencies responsible for curriculum development, and the second was a position paper describing the national position on issues being addressed by these agencies. These papers are presented in edited, condensed versions in this document. A profile of APEID is also included. (PGD)

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APEID

ASIAN PROGRAMME
OF EDUCATIONAL INNOVATION
FOR DEVELOPMENT

NATIONAL STRATEGIES FOR CURRICULUM DEVELOPMENT

Papers presented
at a Regional Seminar
held in Canberra
and Sydney, Australia

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INTRODUCTION

Curriculum development is one of the areas of innovation included in the work plans of the Asian Programme of Education Innovation for Development (APEID) for its second-cycle period (1977 to 1981).

At the Fifth Regional Consultation Meeting on APEID held by Unesco in Bangkok in March 1978, Curriculum for Development was one of the five major concerns. From the discussions of this meeting and the deliberations of three High-Level Personnel Exchange Workshops, which had previously been held, it appeared that there were divergences of opinion about the ways in which national-level agencies might approach curriculum development.

Therefore the Australian Curriculum Development Centre, an Associated Centre of APEID, jointly with the Asian Centre of Educational Innovation for Development (ACEID), Unesco, Bangkok, and in co-operation with the Australian National Commission for co-operation with Unesco, planned and organized a High-Level Personnel Project Study and Seminar on Design of Curricula, which was held from 10 to 21 September 1979.

The seminar was attended by participants and observers from Afghanistan, Australia, India, Indonesia, Japan, Malaysia, Nepal, Pakistan, Papua New Guinea, the Philippines, Republic of Korea, Singapore, Sri Lanka and Thailand. Unesco Headquarters was represented by Mr George Vaideanu, Chief of the Section of Structures and Contents of Education, and ACEID by Dr Mohan C. Pant, Science Education Specialist.

The purpose of the seminar was to provide an opportunity to the Directors or senior staff members responsible for designing and introducing curriculum innovation in APEID countries to meet primarily to exchange experiences and explore problems and issues of common interest; and secondarily to visit and study selected curriculum projects of the host country, thus fostering professional links between Australian educators and the visitors.

Every participants brought to the meeting two papers: An 'Institutional Profile', outlining the structure and methods of working of the national-level organizations to which they belonged, and a 'Country Position Paper', on national issues in curriculum development. The meeting felt that the papers were of considerable interest from both an educational and a cultural point of view, and the Curriculum Development Centre undertook to prepare this edited and condensed version.

The Unesco Regional Office is grateful to the contributors and is pleased to acknowledge the valuable services provided by the host centre, Curriculum Development Centre, Canberra, Australia, and its Director, Dr Malcolm Skilbeck. Special thanks are due to Miss Marguerite Wells and Miss Clare Hughs, staff members of the host centre, who edited these papers.

INSTITUTIONAL PROFILE OF APEID

The experience of the Asian Programme of Educational Innovation for Development (APEID) is presented here as an example of the emerging regional co-operation in the field of education in Asia and Oceania.

Established in 1973 at the recommendation of the Third Regional Conference of Ministers of Education and Those Responsible for Economic Planning in Asia (Singapore, 1971) and by authorization of the General Conference of Unesco at its 17th session (Paris, 1972), APEID has been in its second 4-year cycle of operations since January 1978.

The 18 Member States participating in APEID, as of 31 January 1980, are: Democratic Republic of Afghanistan, Australia, Bangladesh, India, Indonesia, Islamic Republic of Iran, Japan, Lao People's Democratic Republic, Malaysia, Nepal, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Singapore, Socialist Republic of Viet-Nam, Democratic Socialist Republic of Sri Lanka and Thailand.

I. Nature and aims of APEID

Based on the participating Member States' national goals and their commitment to national development in the context of their political, social and economic systems, APEID is a co-operative endeavour of the Member States sharing a commonality of outlook towards progress and change. It seeks to give expression to the idea of development as an over-all, multi-dimensional and diversified process, essentially endogenous in nature, linked with the values specific to each society, and requiring the active participation of individuals and groups who are its agents and its beneficiaries.

APEID is designed and developed jointly by the Member States, and its activities are implemented and supervised through institutions associated with it, with the support and participation of inter-governmental bodies constituted by the Member States of the region pursuing similar objectives. The relationship between the participating Member States is based on reciprocity, mutual learning and self-reliance.

The aims of APEID are:

1. To stimulate efforts of the Member States to improve the quality of life of the people through creating and strengthening national capabilities for the development and implementation of innovations in education, both formal and non-formal;
2. To encourage the Member States to make all groups (students, teachers, parents, village and community leaders, administrative personnel and policy makers) aware of the need for relevant changes in education (both formal and non-formal) as an essential prerequisite for the improvement of the quality of life of the people;

3. To promote understanding and appreciation of the differences in educational practices and approaches of the Member States, and thereby contribute to international understanding and the creation of a new international economic order.

II. Organization and mechanisms

A. Institutional framework

1. National Development Groups (NDGs), established by all the participating Member States, provide a forum at the national level to identify, stimulate and promote educational innovation. They collect, translate and disseminate information; study processes and practices of innovation, and co-ordinate such activities for channelling and sharing of experiences. The NDGs are setting up development groups at the sub-national level down to the institutional level and serving as, or supporting, the disseminating agency for APEID publications. Varied in composition, these are headed usually by a senior professional or administrative officer, and comprise heads of Associated Centres (ACs) implementing agencies and scholars, including persons from outside the education fields.
2. Associated Centres numbering 89 on 31 January 1980, offered by the Member States to collaborate in the programme, carry out innovative projects; host inter-project/inter-country visits, sub-regional and regional activities; organize follow-up national activities; and co-operate with other Associated Centres and ACEID in the design, conduct and evaluation of activities. The Associated Centres are increasingly promoting networking of projects in their specialized areas within the country, and are expected to serve in the areas of their specialization as nodal points for exchange of information and materials within and between countries.
3. The Asian Centre of Educational Innovation for Development (ACEID), which acts as the resource base for, and facilitator, co-ordinator and secretariat of, the Asian Programme of Educational Innovation for Development (APEID), is an integral part of the Unesco Regional Office for Education in Asia and Oceania. ACEID arranges exchanges of persons, information, materials and experiences among the Member States; provides technical support to the Associated Centres in organizing activities under APEID; co-ordinates evaluation and planning of follow-up phase of inter-country activities; organizes in-depth studies to develop independent literature; collaborates with the NDGs in identifying centres of innovation; co-operates with the Member States in joint innovative projects; and collaborates with regional and international organizations with similar aims.
3. Regional Consultation Meetings (RCMs), which bring together the chairmen of the NDGs or senior administrators and selected heads of the Associated Centres, establish APEID's objectives, set its progress, provide guidelines for future action and ensure that the international action is linked to the national initiatives. Each meeting discusses the implementation of a

specific theme, and visits selected projects of the host country. At the beginning of each cycle, the same meeting reviews the performance during the previous cycle and recommends design and scope of the next.

B. Development themes

The main thrust of APEID is the promotion of educational innovation for development. This implies that educational innovations per se are not the primary preoccupation of APEID; rather those educational innovations which directly contribute to and promote development goals which, for the second programming cycle of APEID (1978-1981), have been defined in the five development themes, namely:

1. Education for integrated rural development;
2. Education for development of productive skills relevant to economic development;
3. Universalization of education at the early school levels and functional education for out-of-school youth and adults;
4. Education for better health and nutrition; and
5. Education for national unity and international understanding and co-operation.

It is recognized that there is an interactive relationship between educational innovation and development. Educational innovation will contribute directly to development, and equally importantly, the development process will impel changes and innovations in education.

The five themes represent the common priority concerns of the Member States, but the countries set their own priorities for these themes in their national development goals in accordance with their own conditions and capabilities. The themes are not exclusive; they are mutually supportive and inter-penetrating to a large extent.

C. Areas of innovation

Education itself is a multi-dimensional process; and it is therefore necessary to identify, for operational purposes, those aspects of education in which innovations are essential for contributing to development. These aspects of education have been termed 'areas of innovation', and have been selected so as to define the priorities for APEID in the second programming cycle. They are:

1. Non-formal and alternative structures in education;
2. Administration and management of educational innovations;

3. Curriculum development;
4. Educational technology;
5. Education of teachers, teacher educators and other educational personnel;
6. Science (including mathematics) and technology education; and
7. Vocational and technical education.

The interrelation of areas of innovation and development themes has been operationalized in the work plan of APEID in terms of objectives and expected outcomes.

D. Finance

Funds for programme activities are derived from: (i) Unesco Regular Budget, voted by the General Conference of Unesco; (ii) contributions from the United Nations Development Programme (UNDP); and (iii) voluntary contributions from the participating Member States, both in cash and in kind.

III. Strategies and modes of action

A. Operational principles

1. The sharing and exchange of experiences through co-operative endeavour among the Member States based on their respective expertise and resources available;
2. The planning and organization of activities and programmes co-operatively by the Member States, appreciating that they are in the best position to know about their needs and problems and to decide on the solutions;
3. The planning and implementation of educational programmes in accordance with the areas of concern as reflected in the national development plans of the Member States, bearing in mind that the Member States are themselves at different stages of development;
4. The flexibility for the Member States to be selective in their participation in the APEID programmes, bearing in mind the importance of (a) relevance to the Member States; (b) follow-up action; and (c) multiplier effect;
5. The continuous evaluation of each activity/project through regular feedback from the participating Member States;
6. Resource personnel needed for specific activities to be drawn as far as possible from the Member States;

7. The promotion of bilateral or subregional co-operation and collaboration among the Member States which have similar problems and needs.

B. Categories of activities

1. Inter-project/inter-country visits for sharing, and critical assessment of, experiences of innovation;
2. Mobile training teams for visits to projects in other countries followed by in-country training, by these teams, of corps of nationals;
3. Attachments of staff of one Associated Centre at projects at another Associated Centre; and participation as resource persons of the staff of one Associated Centre at training courses, workshops, or project design, or evaluation exercises organized by another Associated Centre;
4. High-level personnel project studies and seminars for heads and senior staff of innovative centres;
5. Technical working groups for exploration of problems and issues and planning before training courses and other activities; and study groups for analysis and reflection on the current situation, for evaluation of a completed series of activities, for development of instructional/resource materials, and for preparing handbooks on design or implementing activities;
6. Training courses/workshops;
7. Field operational seminars; visits by teams of project staff from different countries, followed by a seminar;
8. Joint innovative projects to generate information base and tools for design, monitoring and evaluation for promoting research-based innovations;
9. Exchange and dissemination of information and materials: newsletter; Associated Centres directory; Associated Centres' training needs and facilities; inventories and annotated lists of innovative projects; studies of policies, institutions, structures, strategies, projects, curricula, training methodologies and facilities; analyses of problem, issues and developments; handbooks on organization of workshops, materials development, design and implementation of educational change, conduct of operational studies and administration and management of innovations; guides on production, use, repairs and renewal of instructional materials; reports on growth, work plans, activities and evaluation of APEID.

COUNTRY PAPERS

Democratic Republic of AFGHANISTAN
Paper by: Mr Abdul Karim AZIZI
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Background

The Democratic Republic of Afghanistan (DRA), has, since the SAUR 1357 Revolution (26 April 1978), begun very active educational development. The previous class-based reactionary government, despite a sixty-year history of formal education in the country, did not take positive steps towards the modernization of education, and ignored numerous national and language groups. The previous constitution provided for only two official languages, Pashtu and Dari (Persian) and these were the only media of instruction. Therefore no effective education was provided for speakers of Baluchi, Nooristani, Turkmani and Uzbeki and nearly 90% of the people were completely illiterate.

No up-to-date, accurate educational data are available, but in 1977 the Ministry of Education announced:

- About 50% of schools were three-year village schools. These could not be called schools in the modern sense, as they lacked qualified teachers, equipment and systematic education;
- 74% of school-age children were not attending schools, and many were illiterate;
- Almost 50% of schools had no building;
- Most schools had not enough educational equipment and facilities;
- Most schools had no library or laboratory;
- The previous government had taken no positive steps to base the curriculum on the needs of the country;
- All textbooks in all subjects were in Pashtu or Dari.

National goals

After the establishment of the new people's régime in 1978, the Democratic Republic of Afghanistan announced a series of thorough-going educational reforms necessary for the achievement of educational, social, economic and democratic objectives of the DRA. These reforms included establishment of a modern school system, elimination of adult illiteracy and stress on women's education, which, due to social conditions, had been practically ignored under the previous regime.

Articles 19, 20 and 21 of Basic Lines of Revolutionary Duties of the Government of the Democratic Republic of Afghanistan state the objectives of education as:

Article 19: Ensuring of universal, compulsory and free education for all children of school age and the creation of all essential conditions for the effective struggle against illiteracy.

Article 20: Expansion of free, intermediate, higher and vocational education in order to train the academic and professional cadres required for the progress of the country and the review of curricula of schools and of institutions of high learning.

Article 21: Creation of a progressive national cultural system, and, as a first step, the ensuring of the conditions essential for the evolution of art, literature, education and publication in the mother tongues of the tribes and nationalities resident in Afghanistan.

In the light of the above three Articles, the Ministry of Education began its first five-year education plan in March 1979.

One of the main objectives of education is the establishment of the following educational system:

- Pre-school education for children of five and six years;
- Primary school education - grades 1-4;
- Middle school education - grades 5-8;
- High school education - grades 9-10;
- Vocational school education - grades 8-10;
- Teacher training colleges - grades 11-12;
- Higher education - grades 11-14.

For many years, the Ministry of Education of Afghanistan paid no attention to the improvement of the curriculum. Secondary schools and other institutions worked on an old and traditional curriculum, almost untouched for thirty years. These old schools based their teaching on memorization of material by pupils, and paid no attention to their reasoning powers. Connection between the school material and everyday life was neglected.

Attempts have been made at various times to modernize curricula for primary schools secondary schools and other institutions. In 1966, for example, with the assistance of the United States Agency for International Development, through the Teachers' College, Columbia University, the Ministry of Education undertook a project in Curriculum and Textbook Development for primary schools. This was the first step towards modernization of the primary curriculum but the project failed because:

- The needs of the country were not properly analysed and necessary information was not obtained;
- Curricula and syllabi were not properly drafted;
- Textbooks and teachers' guides were prepared without consideration of in-service training for teachers;
- Preparation of materials was very slow. For example, by 1976, preparation of textbooks for primary schools was still incomplete.

In Kabul in August 1977, before the revolution, the Ministry of Education, in co-operation with Unesco/ACEID, sponsored a workshop aimed at finding proper internal and external methods and resources for preparing new and better curricula based on the needs of the country. The workshop suggested some positive ideas on development of curricula for secondary schools. The government accepted the proposals and ordered the Ministry of Education to plan new curricula based on them, but no positive steps were taken on the writing of textbooks.

After the revolution, new curricula, taking into account the needs of the country and all national groups, were prepared. Texts based on the new curriculum have now been prepared in six languages for first grade, and two languages for fifth grade. The first-grade books were distributed to schools in cold regions in March 1979, the beginning of the school year in those areas. First-grade and fifth-grade books were distributed in warm regions in September 1979.

Institutional profile

The Ministry of Education is required, according to the Basic Lines of Revolutionary Duties of the Government of the Democratic Republic of Afghanistan, to prepare textbooks in six languages for the children of the various nationalities. The Department of Publication, a department of the Ministry of Education, is responsible for accomplishing educational goals connected with the preparation of textbooks and teachers' guidebooks.

The department has both an administrative function and a textbook preparation function. The latter involves the following activities:

- Preparation of curricula, syllabi, textbooks and teachers' guide books for primary and secondary schools;
- Testing and evaluation of prepared materials for schools;
- Revision of tested and evaluated materials based on the results of evaluations, suggestions of teachers, and suggestions of related members of the section;
- Planning and economical design of textbooks and teachers' guides, and their preparation for the press. Supervision of printing;
- Training of personnel in each subject area;
- Provision of resource materials to sections preparing textbooks;
- Appointment of specialists to prepare textbooks and teachers' guide books.

Relation to other institutions

Where the task is so enormous and the resources so small, the system of education, and of curriculum development in particular, will necessarily be centralized. Education in DRA is therefore centralized, and the State administers, organizes and guides all the educational institutions in the country.

Different departments of the Ministry of Education deal with curriculum development, textbook production, research and evaluation of materials which have been developed, revision of textbooks etc. To avoid duplication, the Ministry of Education has decided to establish a Center of Pedagogical Researches of DRA, to undertake all these activities.

It will be the only establishment in the education system to be responsible for scientific and methodical work in the field of education, psychology and teaching methodology. The Center should eventually become the Academy of Pedagogical Science of the Democratic Republic of Afghanistan. Meanwhile its responsibilities will be:

- Working out of curricula and syllabi for all subjects taught in schools, pre-school establishments and adult illiteracy courses;
- Preparation of textbooks and teachers' guidebooks for all subjects;
- Experimental work connected with the modernization of schools and school education;
- Organization of teachers' conferences;
- Scientific educational and psychological work, connected with the modernization of schools and school education;
- Connexions with foreign pedagogical and psychological establishments and their scientific research;
- Improvement of qualifications of staff of the Center (Fellowships for further study) will be offered to staff;
- Help with in-service training of teachers;
- Taking part in teachers' seminars;
- Design and preparation of audio-visual aids suited to the schools of the country.

The Center will be headed by a president. Two vice-presidents will be responsible respectively for:

- Departments of Language, Science, Social Subjects and Audio-Visual Aids;
- Departments of Education and Educational Research, Administration and the Workshop;

As there is no educational equipment industry in Afghanistan, the Workshop will design and provide kits for scientific subjects for all schools, and audio-visual aids for humanities subjects.

A Scientific Council comprising senior staff, and possibly Unesco experts and other advisers, will discuss the most important questions connected with the work of the Center. Decisions of the Council, approved by the President, will be binding.

Processes

The Ministry sees the production of textbooks as having the following phases:

- Acquisition of background information about different languages and nationalities and the number of school age children in different tribes;
- Formulation of curricula and syllabi for different languages;
- Provision of good specialists for writing textbooks in each subject area;
- Preparation of textbooks and teachers' guides in six different languages for primary schools;
- Production of the newly prepared materials in different languages;
- Distribution of the newly prepared materials to schools as soon as possible;
- Conducting seminars in all subjects for in-service teachers all over the country;
- Provision of long- and short-term seminars for in-service teachers;
- Development of well trained and qualified supervisors in each subject area in different languages.

In this process, developers take into consideration curricula of both the advanced and the developing countries of the region, adapting those patterns which are compatible with Afghan culture and society.

Issues

Problems of education, and therefore of curriculum in Afghanistan, can be summarized as follows.

School buildings: In 1977 the Ministry of Education announced that:

- 50% of schools had buildings constructed for the purpose;
- 19% of schools used mosques;
- 9% of schools used rented houses;
- 18% of schools did not have their own buildings.

Equipment and facilities:

- Most elementary and village schools located outside the cities are either short of, or totally lacking, chairs, blackboards, books, library and playgrounds;
- In schools which do have these facilities, they are seldom used.

Textbooks and teachers' guides:

- Lack of professional staff for writing texts and teachers' guides;
- Lack of accepted technical terminology in the various languages in which materials need to be written;

- Lack of materials necessary for writing new texts and teachers' guides;
- Lack of resource books written in Afghan languages;
- Low capacity of the press which is required to print these materials;
- Lack of a system for distribution to schools.

Teachers:

- Lack of education/training. For example there is not one graduate primary teacher, in either boys' or girls' schools. According to official data, only 1% of teachers are educated to the appropriate level;
- There are not enough teacher training colleges to cope with in-service teachers;
- There is a lack of short and long-term seminars for in-service education.

Other problems are lack of a well-organized educational plan, lack of girls' education and lack of scientific educational research.

Programmes

1. In-service training

Provision of good textbooks and teachers' guides will go a long way towards solving a big educational problem for Afghanistan, but the success of any innovation will depend not only on how well materials are written but on how effectively they are used. The Ministry of Education has therefore given much thought to the problems of teachers' education and has initiated a large-scale in-service programme, using all available internal and external resources. This programme is providing a good atmosphere for teacher training.

With the financial aid of Unicef, the Ministry has been conducting a monthly seminar on utilization of the new materials for first- and fifth-grade teachers, and general directors and vice-directors from the provinces. The seminars comprise general lectures on the aim of education, the five-year education plan, government policies, and child psychology, plus subject matter lectures for good, qualified and experienced teachers, on aims, syllabi, teaching methodology, evaluation, marketing and use of texts and teachers' guides. The number of lectures is related to the number of hours the subject is taught per year. During the lectures, the lecturers chose the best teachers to conduct seminars in their own subject areas, for primary school teachers in their own province. Seminars were conducted in cold regions early in 1979 and for warm regions in September 1979.

Supervisors are being appointed by the Ministry on the recommendation of the Department of Publication. So far, supervisors have been appointed in the fields of mathematics and language, to help first-grade teachers with their problems.

2. Teachers' guidebooks

To teach the new materials with old teaching methods is impossible, so great attention has been paid to the production of teachers' guidebooks to accompany textbooks for all subjects. The new teaching methods suggested for each lesson are aimed at helping the teacher involve the children actively in learning not only a new body of knowledge, but also a new way of thinking about and using that knowledge. For example, each lesson in the guidebook for first-grade mathematics is organized as follows:

- Topic of the lesson;
- Aims (kinds of learning outcomes, appropriate evaluation methods);
- Mathematical terminology (which terms should be introduced in this lesson);
- Materials (kinds of materials required for teaching the lesson most effectively. Materials suggested can usually be obtained readily at little or no cost);
- Information (additional mathematical background for the teacher);
- Procedure (introductory activities for teacher or students, questions to discuss with students, directions for demonstrations and activities using simple materials, problems to be solved by teacher or student on a blackboard and so on, i.e. how to present the lesson in order to accomplish its aims);
- Using the page (discussion of solving examples with students, copying of examples, help with students' problems);
- Suggestions for homework.

Proposals

The government of the DRA needs to take advantage of all possible sources of help with all aspects of the school programme.

Some priorities should be:

- Improvement of the education of members of staff of the Department of Compilation, who are involved in developing new curricula;
- Provision of enough materials for producing new books;
- Provision of schools with educational equipment and facilities;
- A modern press with a larger capacity;
- Conduct of short- and long-term seminars in each subject area, for in-service teachers;
- Provision of professional and qualified supervisors in all subject areas at all grade levels;

- International exchange of written materials about new curricula in each subject area, among countries dealing with new textbooks;
- Seeking financial aid from developing countries of international agencies;
- Provision of scholarships and fellowships for in-service teachers or for members of the Department of Compilation, by government, by developed countries or by international agencies;
- Short and long-term exchange of personnel between countries dealing with new curricula.

Conclusion

The first five-year plan of the DRA aims at full adult literacy by 1984. Since March 1979, more than one million adults have begun to study reading, writing and calculation. Special syllabi for adults have been developed and special textbooks written. The development of a modern school education system is a major priority of the plan. For the completion of both these programmes it will be necessary to improve in- and pre-service training and the problem of pre-service training should be solved by the Ministry of Education, jointly with the Ministry of Higher Education.

During the 1979-84 period, the Ministry of Education of the DRA should complete a great educational programme, giving the country modern school education and eliminating adult illiteracy. The first steps of this programme have been successfully completed, and there is reason to believe that further steps will also succeed.

Commonwealth of AUSTRALIA

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Background

In the Australian Federal system of government, the maintenance and conduct of public schools is the responsibility of State Governments. The Federal Government provides funds to public and private schools for specific purposes through the Australian Schools Commission, and pays scholarships to students in special need, such as Aborigines and geographically isolated children. While Federal Government policy on education and the provision of funds for specific purposes can influence schools and school systems, the State Governments control the major part of the funding of schools and they determine educational policy.

Unlike many APEID countries, Australia has no statement of national goals to provide a framework for educational policy. State Departments of Education develop their own statements on the aims and purposes of education. The over-all organization of the school systems, the provision of teachers and other personnel, the design of schools and systems of assessment, are all determined by the States. Thus considerable variation occurs in fundamental administrative structures. For example, while the general pattern of education is based on a kindergarten to Grade 12 structure, there are differences in the age of initial enrolment, the grade at which the transition from primary to secondary school occurs, and the age at which compulsory education ends. At the secondary level, the majority of State schools are comprehensive, co-educational institutions catering for all students from Grade 7 or 8 to Grade 12. However, Victoria has a parallel system of technical high schools. Tasmania and the Australian Capital Territory have high schools for grades 7-10 and secondary colleges for grades 11 and 12. There are some single sex schools in most States.

Similarly a national agency such as the Curriculum Development Centre has limited power to influence schools or school systems and has to work through existing structures in the States and the Australian Capital Territory. Decisions on the nature of the curriculum of schools, the extent to which schools have the freedom to develop their own curriculum, the methods of student assessment and the level and kind of support structures for curriculum development, are taken at the State level and vary considerably from State to State. Further, one fifth to one quarter of all students are educated in Catholic or independent private schools which, although bound by the same methods of terminal student assessment as State schools, have a high degree of autonomy in curriculum matters.

Each State Department of Education has its own curriculum section which, together with a variety of curriculum committees and Boards of Studies, produces curriculum guidelines, syllabi and materials for its schools and teachers.

The Curriculum Development Centre was established during the early to mid-seventies. This was a time when, in Australia, a period of unprecedented growth of Federal Government expenditure on education was drawing to a close. It was also a period when, in many different parts of the world, philosophies and models of educational development which had flourished during the 1960s were coming under question. Doubts were being voiced about the effectiveness of formal education as a significant means of economic development, as an instrument of social equality and even as a means of meeting specific learning needs in the area of basic skills and competencies. The designs for change which curriculum workers and other educationists used in planning curriculum change processes were themselves being challenged by those who argued for 'organic' rather than 'mechanistic' approaches and in the field of evaluation studies by those favouring 'illuminative' and other ethnographic procedures over the more orthodox methods of measurement against defined objectives.

By the late 1970s the major strategies and concepts of the curriculum development movement, as they had emerged during the 1960s and early seventies, had all been brought under serious challenge. Moreover, this challenge had many sources, both technical/professional and lay/public/political. How far curriculum development agencies and instrumentalities are able to respond to the challenge, by adjusting and adopting themselves to new climates of opinion, new demands and a new economic climate, are matters for debate and discussion at the present time.

In Australia, the climate of educational opinion changed rapidly during the 1970s. Public opinion is now asserting itself against many of the approaches which, a decade ago, were seen as goals for reform. For example, the rapid dismantling and abolition of external examinations, which was once heralded as a mark of educational progress and liberation, is so widely doubted that the movement is going into reverse. A demand for examinations in some form or other, including State-wide achievement testing, is being reaffirmed by politicians, employer groups, organized parent groups and many teachers. The philosophy of progressive education - defined in terms of a wide range of course options, increased freedom of student choice, more relaxed teacher-student relations, experiments in open space buildings and generally a freer environment for teaching and learning - is now under attack. Many calls are being made for a 'return to the basics', 'reversing the downward trend of standards' and 'schooling to meet the needs of the workplace'.

The theme of quantitative expansion of the resource base has been replaced by a questioning of the qualitative achievements. Is value being realized for the educational dollar? Has growth of the educational system brought any improvement in the quality of learning? These questions, as posed, are provocative and rhetorical. Frequently they are put in a way that does not invite careful dissection and appraisal, but asserts an implicit answer. Education is being put on the defensive and it is not well equipped to meet criticisms that challenge the very base and assumptions on which it has been building its development processes.

Institutional profile

The Curriculum Development Centre is a national body, established by the Commonwealth (Federal Australian) Government to undertake a range of tasks relating to school curriculum. The Act which established the Centre in 1975 set out its functions as:

- To devise and develop, and to promote and assist in the devising and development of, school curricula and school educational materials;
- To undertake, promote and assist in research into matters related to school curricula and school educational materials;
- To make available or supply school curricula and school educational materials;
- To collect, assess and disseminate, and to promote and assist in the collection, assessment and dissemination of, information relating to school curricula and school educational materials;
- To do anything incidental or conducive to the performance of any of the foregoing functions;
- To arrange for the printing and publication of, and of information relating to, school curricula and school educational materials.

The Act defines school curricula to include 'methods and procedures for use in or in connexion with teaching or learning in schools'.

The rationale for the establishment of the Curriculum Development Centre includes the idea that more effective, more economical, curriculum development programmes in some fields would result from a pooling of resources rather than from a series of separate initiatives in the States. The CDC is therefore a co-ordinating body working with school systems in the States on co-operative programmes of work.

Individual schools and teachers are involved in CDC projects in a number of ways. While many participate in trials of curriculum materials, smaller numbers are also contributing to the development of ideas and materials and others are writing up their own innovative programmes for publication. The Centre has provided opportunities for teachers from several States to work together on joint programmes. National workshops, conferences, Study Groups and Working Parties bring together academics, teachers, administrators and curriculum experts to discuss common curriculum problems. While these occasions of free and open exchange do not necessarily result in agreement they often lead to a greater understanding of and consensus on curriculum issues. They provide a forum at the national level for debate and for identification of needs in curriculum development.

The Curriculum Development Centre receives an annual appropriation from the Federal Government. In addition, there is a requirement that the Centre seek contributions of personnel and resources to its projects

from State Departments, Catholic Education Offices, universities and colleges. CDC planning is based on a rolling triennial programme. The programme is rewritten each year to show CDC priorities and the allocation of funds for continuation of existing work and proposed new initiatives for the next three years. While the Centre draws its principal income from funds provided by the Federal Government, income is also earned from the sale of materials. The total income from all sources in the 1979-80 financial year is estimated at about \$3.0 million.

Currently there is a full-time staff of thirty-four, plus seven part-time staff. In addition there are five full-time seconded staff or consultants. In the States there are full-time and part-time people seconded to work on CDC projects, making up the equivalent of a further 20 full-time positions.

Style

The Centre does not base its work on any one model of curriculum development. It has used a wide range of approaches, including task forces using an objectives model for preparing classroom materials, study groups to review topics and analyse issues, the wide circulation of guidelines and position papers, commissioned evaluation studies and others. The Centre's approach has been comprehensive and eclectic. However, the classical research, development, diffusion model has come increasingly under question and there have recently been moves to re-define professional and community roles in curriculum.

Issues

The ideas which underlie much of the work in curriculum development and innovation in Australia at the present time include:

- Recognition of the cultural diversity of Australian society;
- The need to take into account rapid technological, social and cultural changes;
- Commitment both to equality of opportunity and quality of process and outcome;
- The need to compensate for social and educational disadvantage.

Education for a multicultural society

Teachers are increasingly working with classes of students with a wide range of ethnic and racial backgrounds. This is not a new problem but one which has become of greater significance. Recognition that Australia is a multicultural society and that Aboriginal and migrant communities have a right to retain and develop elements of their own culture, requires a new set of assumptions, attitudes and values in the school and in the community.

Firstly, the school has a responsibility to give students some awareness of the multicultural complexion of Australian society, to foster acceptance of and respect for the notion of difference and to recognize that a wide range of attitudes, beliefs, behaviours and social practices is essential

in a society that values pluralism. Ethnic and Aboriginal studies are part of the process of fostering awareness of the cultural backgrounds of the minority groups which form a significant part of the Australian population.

Secondly, the very idea of a plural, multicultural society brings into question the nature and composition of unifying core values, beliefs, knowledge, and customs. Australian society, at least in some ways, may be seen as undergoing an identity crisis. The multicultural movement, by asserting the value of diversity, is prompting many Australians to rethink national identity, and a definite movement towards unifying, core values is now emerging. We are by no means clear about what such values might mean or produce for curriculum.

Thirdly, in a multicultural setting the school has an important role in the development of language. Migrant children who have little knowledge of English are generally provided with intensive courses in English as a second language. These programmes are conducted in schools and at specially established migrant centres. They aim to give the migrant child sufficient command of basic English to cope with normal classroom work. Ethnic language classes are generally provided in 'Ethnic Schools' which operate out of school hours and aim at development and maintenance of the child's mother tongue. The role of the normal school in the teaching of ethnic languages and the desirability and effectiveness of bilingual programmes is currently under discussion.

School-based curriculum development

Because of the diversity of Australian society, schools have to cater for children with a wide range of cultural backgrounds, aspirations, abilities and interests. Schools drawing students from different sorts of communities need different educational programmes. In this situation, centralized decisions about details of school curriculum are seen as inappropriate. Rather than detailed syllabi and prescribed content, schools need flexible guidelines, broad content outlines and sample materials through which they can develop courses and programmes designed to meet the particular educational needs of their students.

Recently, State Departments of Education and Catholic Education Offices have undertaken gradual devolution of responsibility for education decision-making along these lines.

This increasing responsibility does not imply that all teachers or schools are immediately required to create new curricula. While some may wish to design new programmes to meet the particular needs of their students, many will select ideas and resources from the range available, and adopt or adapt them for their own situation. The CDC, State Departments of Education, Catholic and other independent schools are working co-operatively to ensure that resources and curriculum materials incorporating new ideas and teaching strategies and based on sound educational principles are available for schools. However, the move towards greater autonomy for schools does raise questions about the role of State Departments of Education and the CDC in the curriculum area. What are the functions of a national curriculum organization when the determination of school programmes is largely in the hands of State Boards of Studies and teachers in schools? - and heavily influenced by commercial publishing houses?

Curriculum development at the school level involves whole school planning, and teachers have to devise ways of bringing parents and other members of the community into the curriculum development process. The new tasks involved in school-based curriculum development require of teachers new skills. They also require appropriate pre-service and in-service education. One role for the CDC is to identify the new skills that are needed and to assist in the design of workshops and in-service activities for teachers.

Core curriculum

Given the diversity of cultural background and the need to devise programmes that meet the interests, talents and abilities of individual students, the question arises, which common learning experiences are essential? Is there a 'core' curriculum which should be compulsory for all students? If there is such a 'core' of essential learning experiences, how can this be defined and by whom?

In practice, particularly in secondary schools, the core is generally defined in terms of a number of compulsory subjects: English, mathematics, science, social studies, physical and health education and sometimes an art or a craft. However, within these subject areas there is both choice between disciplines, (for example, history, geography or social science) and considerable variation in the selection of content and approach, so that agreement about compulsory subject areas does not necessarily imply common learning experience or common outcomes for all students.

What is being sought at the present time is a concept of core curriculum which is neither a set of basic skills in literacy and numeracy nor an aggregate of compulsory subjects. The CDC Working Party convened to work on Core Curriculum and Values Education saw the core as including, or having implications for, content (including basic skills), teaching processes and approaches, and the whole school environment. All of these would influence the development of students' understandings, values, attitudes, and personal qualities, in a variety of ways.

Language development

One unquestioned shared value for the whole country is the acceptance of English as the language of all Australians. A prime task for schools is therefore to ensure that all students achieve some mastery of English, spoken and written.

There is considerable criticism of schools, especially from employers, to the effect that students do not gain a sufficient command of the English language, particularly the forms used in industry, commerce and public life.

While there is a considerable basis of research on the development of language and reading skills in young children, much less is known about development of language skills in the late primary, early secondary age group. Also there are opposing and strongly held views about:

- The place of literature in the teaching of language;
- The desirability of teaching about language (grammar, syntax, vocabulary and so on) compared with learning language through use in schools;

- The acceptability in schools of various dialects or language registers other than standard forms.

A national language programme being undertaken by CDC is addressing these and related issues.

A network

Of particular concern to the CDC at this stage of its development is the relationship between a national agency and its field of operations. This means the network of relationships whereby the CDC

- Learns about and comes to understand the social, economic, political and pedagogical environment;
- Seeks influence and impact upon schools, classrooms, teachers and teacher support groups. A great deal of the Centre's work involves discussion with authorities, groups and individuals throughout the country, on areas of co-operative endeavour. Communication is vital, yet the country is large and the major centres of population separated from one another by considerable distances, so it is easy to underestimate the impact of distance and scale on a work programme which must be undertaken on a basis of close and frequent consultation and negotiation.

Networking is an activity in which all professional staff of the Centre are closely engaged. Unlike the Americans, who were first to have adopted this approach, at least on any significant scale, the CDC approach to networking does not entail large teams of 'field agents'. A quite crucial decision was taken by the Centre, late in 1975, not to set up a field-work structure comprising its own staff. The reason for this was partly financial but no less important was the view that to seek to establish a network of agents largely independent of the existing structures in the States, would be a retrogressive move. Thus, the CDC as a 'change agent' was not seen to be independent of existing forces and structures. The task was to work with the existing systems and bodies, to relate to their structures and processes, to work alongside their personnel.

The network idea is not one whereby ideas and products generated in one place are spread to all others; instead the network permits joint activity, exchange, mutual influence, and the quest for shared areas of interest and activity. The CDC is one of many nodal points in the system. Its role is more to facilitate, support and communicate than it is to direct or even guide.

In education, the term 'dissemination' is frequently used so that it is indistinguishable from commercial product marketing. The CDC, however, regards its primary dissemination task as spreading knowledge and understanding of curriculum matters in general and its own ideas, processes of development and project materials in particular. The audience is ultimately all schools in Australia; more precisely all teachers, and the various branches or agencies which impinge upon and influence their work, e.g. teacher-education institutions, community groups, parents, administrators, politicians and so on. However, the immediate target

is not the teachers themselves, but the systems and structures within which they work:

- State and independent systems;
- Subject and other professional associations;
- Teacher education/in-service institutions;
- Representative parent and other community groups

The CDC dissemination role includes:

- Sowing and spreading ideas and materials;
- Exchange or translocation of ideas, materials and personnel;
- Motivating audiences and marketing products;
- Professional development, and the support of processes such as in-service education.

Dissemination is then a complex process in which marketing of products - sale of classroom materials - is but one element. Dissemination is a central task of the Centre, but it is not a task to which constant weight and importance must be given over time. Different dissemination issues emerge at different periods. At this time, when the CDC is producing large quantities of materials from the various projects it has been supporting, marketing has become crucial, whereas the sowing of ideas was a major preoccupation two or three years ago. External factors are not unimportant here: the annual appropriation from Government is now having to be augmented by returns from sales.

It has been CDC experience that project planning and development have not adequately addressed dissemination issues. The development process has been consistently under-budgeted and under-costed, and stress has been on the relatively short term aim of production of materials rather than on the longer aim of change in teaching/learning. This is a quite fundamental issue which indeed brings into question the whole concept of dissemination and the model of educational change of which it forms a part.

INDIA

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History

The first discontinuity in Indian education appeared with the introduction of western education in the mid-nineteenth century. Ever since, India has been trying to grapple with this problem of discontinuity and of recovering its identity through a linkage with tradition. In this attempt, Mahatma Gandhi became the key figure during the national struggle for freedom in the early years of the twentieth century. It was under his guidance that the first attempt was made to develop a plan for a system of education with an Indian identity and capable of overcoming the discontinuity with the past. The central idea of this system, known as Basic Education, is to bridge the gap between the school and the community, school and life, education and work, through a curriculum which will reflect the needs and aspirations of the people, and will centre around some useful work leading to a product which has utility. The entire arrangement of the learning situation in this scheme was to involve the students and teachers at the village level in actual community life, centring around agricultural practices, simple handicrafts and so on. It was an attempt to recover the indigenous Indian system and yet, at the same time, build into it a forward look by changing the emphasis of education from scholastic to productive work. This scheme was introduced by the Government when India became free, but it did not last. In 1964 the Government of India appointed the Education Commission to make a thorough review of the education system, and since then efforts have been made to implement the Commission's recommendations which accepted the basic principles enunciated by Gandhiji in his approach to education.

The philosophy underlying the new approach to curriculum was enunciated by the National Council for Educational Research and Training in its document 'Curriculum for Ten Year School' derived from the basic recommendations of the Education Commission. The enrolment of children in the primary schools is not uniform throughout the country. There are some States where the enrolment of the children in the age group 6-11 years is 90% or more, but in other parts of the country it is much lower, in some cases not more than 60%. Not only are the children not enrolled; they tend to drop out after one or two years of schooling. Dropouts are mainly girls and children from the backward sections of society. Areas which had taken to western education early maintain the advantage of having entered the field first, however in many States in India, education was not considered as a priority and people lived in darkness. Thus there is a wide variation among the States, in the dropout rate. It was only after independence and with the integration of all the States with the Union of India, that

modern education found a place and people in general began to receive its benefits. Low enrolment and high drop-out rate indicate, among other things, the need for a change in the curriculum. It has to be relevant to the needs and aspirations of the people; the present curriculum is not considered suitable by either children or adults in village societies. To develop a curriculum which will respond to the needs of the local people, the school and the teacher need some flexibility and freedom in developing curriculum, instructional materials, methods of teaching, evaluation and so on.

National goals

It was pointed out in the Education Commission's Report that education functions as an instrument of social change and relates to productivity, which is in turn linked with economics and national development. In developing the curriculum, therefore, one has to consider the modernization aspect, the community, its traditions, culture, values and so on. Tradition versus modernity is the second important area of conflict in the history of education in India and is in a way linked with the first conflict described earlier as the conflict between discontinuity and Indian identity. Historically, the conflict between modernity and tradition arose out of the process of modernization introduced by the British, not only in education, but in other areas of life as well. In the process of modernization, there has been development of industry along with a system of public administration and a democratic constitution. All these require certain kinds of qualities and abilities in the citizens. Education has to be geared to the task of developing these abilities and competences as well as to developing attitudes and values. This is why the successive Commissions of Education have all emphasized upgrading of standards and modernization of syllabi, courses of studies, textbooks and so on.

The Gandhian principles make work, particularly manual labour, the focal point of educational activity. This is linked with changing the character of the school so that it begins to respond to the developmental needs of the community and to participate in community work. Arising out of the modernization of the economy, there is an increasing demand for technically trained manpower and an expanding job-market requiring diverse skills and knowledge. A purely scholastic and bookish education in the schools is bound to create problems of maladaptation. Most Commissions have criticized this aspect of schooling and have recommended very strongly the acceptance of Gandhian principles. This is also in line with the thinking of the International Education Commission. But making work the central feature of school curriculum goes counter to the traditional ethos and culture of a caste-ridden society fascinated by white collar jobs. Education centring around work, and particularly work which involves manual labour, does not therefore arouse enthusiasm. But this is a direction in which the curriculum has to move so that in the secondary stage, vocationalization can take place and curriculum becomes related to the economic life of the community.

In India, education has been more or less an aspect of religious training. With the development of a secular democratic state it has become important to give people a new value orientation. A curriculum has to provide values which lead to the freedom of the individual and development of his full potential personality. At the same time, the individual has

to learn the social values of co-operation and sacrifice, without which a democracy cannot prosper, particularly in a country like India, where a very large number of people are not only illiterate but also poor.

Institutional profile

The National Council of Educational Research and Training (NCERT) is an autonomous organization under the Ministry of Education and Social Welfare. It was established in 1961 by the Central Government, as an amalgamation of a number of bodies involved in educational research.

The role of the NCERT is to assist and advise the Ministry of Education in the formulation and implementation of its policies for education, and for this purpose to undertake research, development, training, evaluation and dissemination activities. Its headquarters are at New Delhi, where it has a National Institute of Education with various departments and units including a Publication Unit and a Workshop. This is the main centre for its research and development activities. In addition, there are four Regional Colleges of Education located in Ajmer, Bhopal, Bhubaneswar and Mysore for the four regions of the country. These Colleges are concerned with innovative teacher-education programmes, both pre-service and in-service. There is a Field Office in every State to liaise with the State Government. Thus the network of NCERT and its mode of working as well as its constitution give it a built-in mechanism for participation on a very large scale, of people at various levels in the field of education. This leads to the gradual educational change that India has been trying to achieve.

In 1964-66, the Education Commission made a very thorough study of the Indian educational system in all its aspects. The implementation of its recommendations depends on the various agencies and institutions, of which one is NCERT. The NCERT has been largely responsible for bringing out the changes, both in structure and function as well as curriculum, textbooks, instructional materials, teacher training, examinations etc. envisaged in the Education Commission's Report. A new policy is now on the anvil again, as a result of the NCERT's experience in research and developmental work, during the course of its efforts to implement the recommendations of the Education Commission. The NCERT is a change-agent. Its role today is to bring people from the States for discussion and debate, and to develop a consensus and assist the States in making the changes required. It brings about change through democratic methods of participation, debate, discussion etc. based on research and evaluation.

NCERT's Memorandum of Association lays down that:

- The objects of the Council shall be to assist and advise the Ministry of Education and Social Welfare in the implementation of its policies and major programmes in the field of education, particularly school education;
- For the realization of these objectives, the Council may undertake any, or all, of the following programmes and activities:
 - To undertake, aid, promote and coordinate research in all branches of education;

- To organize pre-service and in-service training mainly at an advanced level;
- To organize extension services for such institutions in the country as are engaged in educational research, training of teachers or provision of extension services to schools;
- To develop and/or disseminate improved educational techniques and practices in schools.

The Council's activities include:

- Development of curriculum;
- Development of instructional materials, including textbooks;
- Teacher education: both pre-service and in-service development of curricula and instructional materials;
- Examination reform and research;
- Talent search scholarship: administration of tests and award of scholarships and follow-up;
- Research: psychological, sociological, teaching techniques, educational technology, programmed learning, testing etc.;
- Vocationalization of education (including socially useful productive work at the elementary stage);
- Development of science kits;
- Non-formal education;
- Survey and data processing;
- Evaluation of textbooks and other instrumental materials;
- Documentation, information and publication services;
- Teaching aids;
- Educational technology.

Relations with other institutions

The members of the NCERT Council are the Education Ministers of each State of India, plus twelve nominated eminent educationists, very senior NCERT staff and the Chairman of the University Grants Commission. The Union Minister for Education is the President of the Council. Since the Council is the highest policy-making body, it is through it that national level policy decisions are implemented at the State level, and this is reflected in the Council's membership. Thus in a federal system the Central Government is trying to develop a unified pattern of education.

NCERT's linkages with the States are very important, because education is a subject under the Constitution for which the Centre and the States are concurrently responsible. Whereas the Council, through the membership of the Education Ministers, provides for high level policy-making and participation in decision-making, this is not enough to ensure action. Hence, the Director of the NCERT is usually involved in other meetings and committees related to State-level planning and decision-making.

The executive at the State level has the Education Secretary at the top. Here the NCERT acts only in an advisory capacity. Whenever meetings of the Secretaries at State level are held, the Director of the NCERT is invited, so the NCERT knows of problems and can communicate directly with State functionaries on how a policy can be implemented. The Director of the NCERT is also a member of the Central Advisory Board of Education which usually meets once a year to consider all policy matters concerning education at all levels and in all its aspects.

In addition to the high level decision-making meetings and committees, it is necessary to have more direct linkages with the implementing agencies in the States. Hence the NCERT has been operating a Field Office located in every State and in the charge of a Field Adviser, who is of the rank of Reader. This office brings to the notice of the State Governments the developments taking place at the central level, and particularly NCERT's work in research and development, which has implications for implementation. The Field Adviser also brings to the notice of the NCERT, developments in the States on matters concerning education, and on problems where the State faces difficulty in implementing the policy. As a result of this give and take, programmes are arranged by the NCERT at the State level, where experts are associated with State level experts in curriculum development, teacher training, textbook preparation and so on.

As regards relations with other national level departments, it is usually through the Ministry of Education at the Centre that the NCERT has occasion to participate in inter-ministerial meetings of co-ordination e.g. in health education, population education, vocationalization and so on.

Individual schools are not directly associated with the programmes of the NCERT, but school-teachers in their individual capacities are involved, through task forces, seminars, conferences, committees etc. Professional Associations of teachers are encouraged, through grants, to hold annual conventions and to publish a journal. NCERT participates in these conventions and in the national level conference of parent-teacher associations.

Academics are invited from time to time to join NCERT Committees to develop curriculum, textbooks, instructional materials, research, etc. Programmes are developed by individual departments in the NCERT, scrutinized by these committees and approved by the Executive Committee. When the budget is sanctioned, individual departments begin to implement the programmes. The NCERT is fully funded by the Government of India, but in implementation of programmes, departments take care to see that State level institutions and experts are involved, so that there is a general acceptance of innovations.

Scale

The NCERT's budget for 1977-78 was 51.6 million rupees. The proportion of academic and professional staff working in these places is 23%. The administrative staff is roughly 32%. Clerical and other staff comprise 45%. Major assistance has come from Unesco, Unicef and the UNDP.

Style

The objectives of education, as laid down in very general terms in Government policy, are a source of educational objectives for curriculum making.

However, in one of the earliest attempts to develop a social studies curriculum, there were no clear cut objectives available in any policy statement. What was available was the commitment of the Government after independence to long-standing goals and values arising out of the freedom movement inspired by Mahatma Gandhi and translated into political terms in Independent India by Prime Minister Nehru. The NCERT started by setting up a group of educationists, curriculum makers, administrators, teachers etc., who, working through committees and conferences, first developed a set of educational objectives for a social studies curriculum, covering the entire school stage. Some of the models available in western countries were examined as a source of ideas. The educational objectives thus agreed upon were further specified in terms of learning outcomes. The content of syllabi and textbooks was examined. The group considered objectives on the one hand, and content on the other hand, and worked out a sequence of progress through the first class to the secondary stage. Details were then filled in through workshops of teachers, curriculum experts and others. On the basis of this plan, textbooks and other instructional materials were developed. The method of teaching was specified and incorporated in the in-service programme of teacher education which was developed in order to facilitate the introduction of this curriculum in the States.

In another attempt, this time in the case of science, the approach was slightly different. There was first a very critical examination of the existing syllabi of the various Boards of Secondary Education as well as the syllabi prevalent in the elementary schools which were directly under the control of the Departments of Education in the States. There was a Unesco Mission consisting of experts from various countries, including the USA and the USSR, who in their report had examined such syllabi and textbooks and had pointed out, in the early sixties, the urgent need for a complete overhaul of science education at the school stage in India.

They had even included in their report a draft syllabus, based largely on the Russian model. Later through Unesco, the NCERT brought in a large number of Russian experts in physics, chemistry, biology, mathematics etc. For each science subject, a group was set up involving these experts as well as Indian educators. The experience of PSSC, SMSG etc., in the USA, of Nuffield Foundation work in the UK and such other experiences in the developed countries were studied very closely. Under their influence, the groups developed a set of objectives to be achieved by instruction in the schools, and for which textual and other

materials, and laboratory equipment had to be prepared. These objectives were not strictly behavioural objectives, but they were specific enough to develop syllabi, and they led to the writing of textbooks and preparation of other materials, equipment etc. The first drafts were prepared in conferences, seminars and workshops, discussed and then adopted. Later on, before finalizing, the instructional materials and equipment were tried out on the ten experimental schools which were associated with the NCERT.

The NCERT's first attempt at development of curriculum covering all aspects of school education was made in the mid-1970s. The approach was first to set up a large group of specialists, educators, and other such people who were knowledgeable about school education as well as the goals and aspirations of the people, as reflected in the policy document on education which the Government issued in 1968. This group spent some time in making the issues clear, and derived general objectives for the preparation of curricula. The NCERT then set up special subject groups, process groups, methodology groups etc., which developed their own area objectives in more specific and behavioural terms. Finally these were all put together in a two-way chart, listing behavioural objectives from the first class to the end of secondary education, and content. The objectives were in terms of knowledge, skills, comprehension etc., and followed the taxonomic approach. It was thus a centralized, specialized group model of curriculum design and development. Once this framework was prepared centrally, several groups were set up in the NCERT to develop detailed curricula, instructional materials etc. In these groups people from the university down to the primary school-teacher were associated at various stages. This curriculum design was then passed on to the State authorities who could either accept it in toto or make political changes to suit their circumstances. This is how a national curriculum design was attempted.

Issues

National policy goals are not usually available in clear cut terms. They are pronounced from time to time by persons in political leadership as well as in the Government, and they are usually in global terms which are very difficult to translate operationally into a school educational system. In a democracy, the question often arises: whose goals are we talking about, when we talk of national goals? Are these the goals of only the upper elite who are also the leaders of the various political parties? How do we reflect the goals of the people? In a country like India, the method of representation of the people in a democratic constitution is such that the views voiced at the highest level do not seem to reflect the specific needs and aspirations of the village people. Mahatma Gandhi was very much aware of this and he was able to voice the aspirations of the people very effectively, but since his death, in order to identify national goals, any curriculum group now has to analyse critically what documents are available. A question which arises here is whether such an analysis can possibly reflect the variety which is prevalent in India at the grass-roots level. Indian society is plural, multi-religious, and multi-linguistic, with a large number of castes and sub-castes. If curriculum has to respond meaningfully to children coming from these various diverse communities, living in very different kinds of historical, geographical and cultural conditions, it is obvious that a centralized model of curriculum making cannot be very much of a success.

This raises the second most important question, which is that it is difficult to do justice to both rural and urban India in one curriculum. Perhaps a compromise has to be made for the sake of the unity and integrity of the nation, for India is in the process of nation-building, to which education has to contribute to a great deal. This compromise is between a totally centralized curriculum and a totally decentralized curriculum, a totally middle-class urban curriculum and totally rural curriculum. We should compromise with a common core curriculum and allow variations outside the core, so that the diversities of needs and aspirations between rural, urban, various castes, communities, languages and religious groups can be met. There is also a difficulty in a country like India in completely decentralizing curriculum making. There are about 3.5 million teachers and 100 million students covering the entire spectrum of education from the elementary to the university. Take out of this the 100 odd universities and the few thousand colleges, and the rest is all school level. The school system is thus a huge thing. While there may be some satisfaction in standardizing the curriculum for all these schools on paper, in practice the diversity among teachers in their competence and attitudes as well as the differences among schools in terms of their facilities, equipment etc., are so large that curricula are bound to be different. Yet the task of decentralizing becomes in practice difficult, because the people are largely illiterate and cannot participate in curriculum making. Even the primary school-teachers who comprise the very large majority of teachers in the country, do not have the competence to handle meaningfully the development of curriculum. Under such circumstances, the educational administration which has developed, since the introduction of western education, in the educationally more advanced areas, on a centralised decision-making model, tends to take over all the functions which should largely belong to the teacher, the school and the community.

Another problem is that any change in the curriculum leads to change in methods of instruction, processes of learning, instructional materials and evaluation. This requires a large scale in-service teacher education programme so that within a short period of time, teachers can be oriented towards the new curriculum. In-service teacher education in the traditional teacher training institutions is such that large-scale teacher training operations cannot be undertaken. It becomes therefore necessary to innovate in the area of teacher education also and to develop educational technology to cope with such needs and demands. The question that arises is whether in-service programmes should be centralized. If they are not centralized, the chances are that there will again be uneven development. Those parts of the country which are advanced educationally tend to accept innovations more readily and organize suitable programmes more quickly, with the result that the gap between the more advanced and less advanced parts of the country increases. It seems that in a developing country like India, one has to face this problem of increasing egalitarianism, on the one hand, and, on the other, increasing inequality.

Once a curriculum is in operation, there is no systematic procedure of evaluation. Informally one gets to know about the reaction of teachers, parents and schoolchildren. The sources of such opinions are newspapers and teachers' conferences. Every State Board of Secondary Education is an autonomous body. Each has, of course, a machinery for critically examining existing and new syllabi. They operate through experts and teachers. The results of examinations, particularly of the public

examination at the end of secondary school, are used to check which parts of the curriculum are effectively learned and which are not. The emphasis is largely on intellectual aspects. Although in the curriculum plan, mention is made of attitudes and values, there is no scientific assessment of the curriculum in operation from that point of view. Thus, for example, soon after the introduction of the new curriculum of the NCERT, there were sharp reactions from teachers, parents etc., leading finally to the appointment of special committees by the NCERT to review the curriculum critically, and if necessary, modify. NCERT has also learned during the course of its experience in following a centralized model of curriculum development, that the strategy of curriculum development should involve much more decentralized studies and investigations, on the basis of which, need-based curricula should be developed by different communities. With the introduction of non-formal education, this goal has become more real, and the NCERT is engaged in developing such decentralized curricula and learning modules covering all stages of education.

In curriculum evaluation, the NCERT is currently engaged, to mention one example, in developing a procedure for evaluating the learning outcomes at the end of the elementary stage of education (that is, after eight years of school from age six). The question that has been raised is whether there can be a nationally accepted minimum learning core. Through several conferences and workshops, the NCERT has identified such a minimum, which has been described in terms of competences to be acquired through certain kinds of processes of learning, rather than as subject matter competence.

Another kind of question which has been raised is: in view of the variety that prevails in India, how do we go about developing a minimum standard of attainment? Again, the approach is to identify certain kinds of abilities and processes which a child of fourteen years ought to be able to master to the satisfaction of the examiners concerned, and to test these on a sampling basis. There are, however, some problems arising out of the multiplicity of languages in India. How do we obtain comparable results through different languages? Instruction in the school at the elementary stage is through the mother tongue of the child, which is usually the language of the State. But in every State, there are linguistic minorities as well. The question is, then, whether such linguistic minorities should be tested in their own language or in the language of the State through which they have received instruction?

In order to set a standard at the end of one stage, it is necessary to decide how it is related to the standard at the end of another stage. To what extent should the standard at the end of eight years determine that at the end of ten years? One of the problems in the Indian situation arises out of the fact that practically 60% of the children in the age group 6-11 years, drop out of school before completing five years of schooling. Attempts are being made to give them education through non-formal methods, in competences which they can share with children following formal schooling. If the standard at the end of elementary stage of education is clearly linked with the standard at the end of secondary education and if both depend heavily on school curricula, then obviously we will be encouraging formal schooling rather than non-formal education. The country, on the contrary, is trying to

switch over to a policy of providing education for all, according to their convenience, and in the way they want it. Hence, the standard at the elementary stage of eight years must be such that it is not necessary for a child to attend school for eight years in order to achieve that standard. This means identification of those components of the standard of achievement at the end of elementary stage which will be independent of schooling. Inter-disciplinary research involving education, psychology, sociology, economics and other subjects, is needed to solve this problem. This is where perhaps international assistance and collaboration could be useful.

INDONESIA

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Background

Indonesia is a nation of islands inhabited by hundreds of ethnic groups with different cultures, traditions and languages. However, seventeen years before Independence, Indonesian youth, comprising students from different regions with different ethnic and cultural backgrounds, pledged themselves to a sacred mission: to one nation, one motherland and one language. Since Independence in 1945, the Government has adopted a basic policy consistent with this mission, following the motto: 'Diversity in Unity' ('Bhinneka Tunggal Ika'). The Ministry of Education and Culture too, has adopted this policy in the development and management of the educational system, and this is the reason for the use of the Indonesian language as both national language and medium of instruction for all schools in the nation, except for the first three grades of elementary school in the areas where the Indonesian language is not the mother tongue. These facts have especially influenced the adoption of a centralized policy with regard to curriculum design and development.

It was only after 1950 that Indonesia had a unified system of education based on democratic principles. Before Independence, pre-1945, especially during Dutch colonial times, Indonesia adopted a plural system of education, due to social stratification. At the elementary level there were schools for the villagers, schools for the natives oriented toward Dutch culture and using Dutch as the medium of instruction, schools for Europeans, schools for Chinese, and schools for other non-European foreigners. At the high school level there were two main types of school, five-year high schools as the continuation of the European elementary school system and three-year junior high and three-year senior high schools. At this time, the education of native Indonesians working in education was no more than two years above senior high school level. This was because teaching positions in high schools were not open to native Indonesians. For this reason it was only in the late 1950s that the Indonesian personnel working in the educational system began to have professional education at university level. When Indonesia as an independent nation started administering its educational system in 1945, only 20.7% of elementary school age children, 3.4% of junior high school age children and 0.7% of children of senior high school age, were in school. Less than three and half decades after Independence, 85% of elementary school age children, 38.6% of children of junior high school age and 14% of children of senior high school age are in school. It is planned that by the year 1983, at the end of the Third Five Year Development Plan, 100% of elementary school age children, 44.2% of children of junior school age, and 20.8% of children of senior high school age will be in school. For this mass system of education, Indonesia needs more than 500,000

Since 1950 when Indonesia for the first time had the chance to administer the educational system for the whole nation, after five years of fighting to defend her proclaimed independence, there has been a series of curriculum changes, four of them in 1950, 1962, 1964 and in 1969. Change was usually based more on political and value judgement than on research findings and professional considerations. In the 1970s under the Government's First Five Year Development Plan, special programmes to reform the educational system were started. Before 1969 the curriculum was changed by the relevant directorate, on the basis of a policy statement made by the head of the central office, at a conference of school inspectors, school principals and key personnel. These people influenced curriculum change, but the involvement of people working in the subject areas was minimal. Syllabi thus produced were distributed to all schools, but differences were only in the number of hours allocated and in the names of subjects. Curriculum was equated with syllabus. Textbooks were produced by private enterprise in co-operation with individual writers, mostly experienced teachers, and supporting materials were neglected.

National goals

According to the People's Assembly Decree of 1973, education is expected to achieve the following national goals:

To educate 'development-oriented' people with the character of Pancasila and to develop Indonesians who are healthy mentally and physically, with knowledge and skills, creative and responsible, democratic and tolerant, able to develop high intellectual abilities, conscientious, and loving the nation and mankind consistent with values of the 1945 Constitution.

This general goal is reviewed once in five years by the People's Assembly. In 1978 the goal was reformulated as follows:

Education should be directed toward promoting devotion to the one and only God, developing intelligence and skills, improving conscience, strengthening personality and enforcing the spirit of nationalism, so as to create development-oriented people who can both build themselves, and co-operatively take responsibility for the development of the nation.

The development of human characteristics in terms of attitudes and values generated from Pancasila philosophy is to be the main orientation in selecting curriculum objectives, curriculum content and learning processes. The task of a curriculum development group is to translate these philosophies into educational practice in a school setting. The Indonesian curriculum development team therefore based its strategies on the following basic assumptions:

- That the school is only one of many educational and social institutions that influence the development and growth of young people;

- That, in the developing nations, the school is the most strategic social and educational institution influencing the development of young people;
- That the school has limited time and limited facilities to ensure the development and growth of young people;
- That the school should offer essential learning experiences that cannot be offered to young people by other social institutions.

Since the school is only one out of many influences on young people, in developing curriculum we should first identify the school's main role. It is not able to fulfil all the educational roles expected by society at large. This inability results in people unfairly seeing the school as an impotent social agent.

In Indonesia, school is less than 36 periods (45 minutes to each teaching period) per week for junior high school students, and 26 periods for the first and second grade of elementary school. Thus for less than 12% of their week, students are learning in a school setting, and the rest is beyond the control of the school. However, this is the only time when the students can engage in a systematic learning process directed toward the achievement of educational objectives. For this reason it is the task of the curriculum designers and curriculum developers to select the learning experiences that have to be undergone in the school setting. Content can only be selected on the basis of educational objectives.

The second assumption of the curriculum development group is that school is a very strategic educational institution in the developing nations. Most of the developing nations are planning to modernize their economic systems, thus improving economic conditions. The achievement of this ideal requires the support of people with capabilities and characteristics relevant to the requirements of a modern economic life. These characteristics need to be developed. Anthropological studies in developing nations have found that many of the characteristics of people of the developing nations are even in contradiction with those required for modern economic life. Thus we cannot expect that non-school social institutions will be effective agents for developing the characteristics needed for modern economic life. Inkeles' study has shown how effective the school has been in developing these characteristics in six developing nations.

However, it is one of the assumptions of the Indonesian curriculum development group that unless we plan an effective learning programme we cannot make optimal use of school as the potential strategic agent of modernization. In other words, if the school is a place of passive role learning, it will not carry out the role expected of it. For this reason, the Indonesian curriculum development group is trying hard to introduce innovative methods, content and principles, to make the school function effectively as an agent of modernization. This is in line with the basic policy of the Ministry and the Government of the Republic.

The third basic assumption of the curriculum development group is that school has limited time and facilities to provide learning experiences for the students. This seems to be in contradiction with the previous assumption that the school is the most potent agent of modernization, but unless we make use of the expensive and limited time that the school can provide, we will gain no benefit from the school as a learning institution.

For this reason, developing a learning model that is efficient and effective in terms of optimal use of facilities, personnel and time for the benefit of the students, is a very crucial challenge. It is recognized that most of this strategic and expensive school time has been used for something other than learning. Listening to the teacher explaining the textbooks, copying notes on the blackboard and other types of passive learning should be reformed if the school is to be organized as an effective agent of change, giving qualified educational service to students. International and national studies on the quality of education have shown how low quality has been in terms of students' cognitive achievement.

The developing nations need to face simultaneously the questions of equality, quality and relevance of education. For this reason, the development of new strategies that can support the operation of an educational system that is at once relevant, effective, efficient and applicable for mass education, is the main and most crucial task in Indonesian curriculum reform.

The last basic assumption, that is, that school should be able to provide essential learning experiences to develop cognitive, affective and psychomotor capabilities, in fact follows from the three previous assumptions.

How to select the essential from the non-essential, how to plan efficient and effective sequences and learning organization, how to select the relevant from the non-relevant; these are questions that Indonesian educators must try to answer. Research and development on these problems are in progress.

The school system

Since the passing of the Education Law in 1950, Indonesia has adopted a 6-3-3 system of education with the following organization:

- A six-year elementary school education to be compulsory by 1983;
- A three year junior high school system. At this level there are two major types of school: general junior high schools and vocational junior high schools. Since 1974, the vocational schools have been integrated gradually into the general junior high school system. For this reason in the new 1975 curriculum, skills education is brought into the general school programme;

- A three year senior high school system, consisting of two types of school: general senior high schools, (academically oriented senior high schools); and vocational high schools. At the general senior high schools there are three types of programme after the second semester of the first grade: the science and mathematics programme, the language oriented programme and the social science oriented programme. There are various kinds of vocational school: technical schools, commerce, home sciences, agriculture and social work schools and so on.

Besides this system the Government has, since 1972, through Development School Pilot Projects, been developing another type of school system, with five years of elementary school, three years of junior high school and three years of senior high school. It is planned that at the end of each school level, a special terminal skills programme is to be offered to prepare those who cannot continue their education for the world of work. In the Development School Pilot Project a school curriculum and administration based on the principles of continuous progress and mastery learning, and using the credit system at secondary level, is being developed.

Institutional profile

When the Office of Educational and Cultural Research and Development was established in 1969 by presidential decree, the Curriculum Development section had the status of an institute, with a very limited number of staff.

At this stage its main activity was to assess the condition and quality of educational practice. In 1971-72 two major activities were carried out, namely:

- Identification of educational objectives relevant to national development and;
- Development of a mechanism and a system of curriculum reform. By 1973 the status of this institute was changed to that of a Task Force, with a special mission to develop models for school curriculum development. Since 1974 this Task Force has developed into the present Center, BP3K (an Indonesian abbreviation for the Office of Educational and Cultural Research and Development). BP3K is the part of the Ministry of Education and Culture which plans long-term educational reform and development. Curriculum reform is one of its main tasks and for this reason, a Center for Curriculum Development is one of the four Centers constituting the Office.

Functions

As stated in a Ministerial decree, the functions of the Center for Curriculum Development are as follows:

General: To organize and co-ordinate activities dealing with the development of the curriculum, educational and cultural infrastructure and facilities covering a reform of content, process, structure, method, and facilities, and to supervise units of curriculum planning and development within the Ministry of Education and Culture.

Specific:

- To formulate the principle of curriculum reform and curriculum development, including educational facilities and infrastructure for all types and levels of school education;
- To define programmes for the development of the curriculum and educational facilities and the requirements for conducting curriculum development;
- To supervise the organization and activities of all curriculum development units in the Ministry of Education and Culture;
- To conduct and develop evaluation programmes for all activities in curriculum planning and curriculum development.

Since the Center's inception, all programmes developed have become part of national development activities, so the Center's budget is a part of the development budget.

It amounts to about one million US dollars, or 40% of the BP3K budget, which is only 1% out of the total budget for the Ministry. Besides these funds coming from the Government, the Centre also receives aid from Unesco/UNDP and UNICEF of about 400,000 US dollars a year. These funds are especially used to bring in international consultants and experts and to send the Center's staff abroad for education and short-term training. Total staff number including part time and attachment staff, is 368, of whom 99 are professional, 244 technical and 25 administrative.

Processes

A centralized system of administration is one of the characteristics of the Indonesian education system, and also of the school curriculum system. Since 1950, a standardized national curriculum has been implemented by all schools of the same type and level. The following traces developments from 1969 onwards, which resulted in the 1975 curriculum for all elementary and secondary schools, and the Development School curriculum, now used by eight sets of pilot schools.

The first activity conducted by the BP3K in 1971 (at this period the Center for Curriculum Development was still at its embryo stage) was to identify educational objectives to be achieved by school education relevant to societal aspiration and national development needs. For this purpose a special study team was established consisting of ten senior officials from various interested Departments, including the

Armed Forces, and BP3K. At this pre-planning stage the major tasks of the team were to study the implications of national development programmes for the quality of school graduates and to assess the peoples' expectation of the quality of school graduates. It was the assumption of the study that unless we knew what the people were expected to do to accomplish national goals, we could not set relevant educational objectives.

For this reason, the team, in identifying the relevant objectives:

- Analysed written documents such as presidential speeches, the constitution and other laws relevant to each national development sector, national development plans, and decrees of the People's Assembly;
- Conducted panel discussions with leaders and experts at national level to identify their views on the expected quality of the school graduates who were to participate in national development and social life;
- Conducted grass-root surveys to identify the views of the people in the field, such as teachers, village leaders and students; and
- Conducted national conferences involving all leaders and experts in education, to review and sanction the conclusions of the study before finalizing them as accepted educational objectives for each school level.

The BP3K thus plans and initiates activities involving all institutions and people concerned with education, to ensure that they participate in the process of establishing educational objectives.

The second step is to formulate a mechanism to reform the school curriculum. In 1972, in Bandung, the BP3K proposed a mechanism to a national conference of senior officials, academics and educators. The mechanism that is now used in designing and developing the curriculum is based on the model approved at this conference.

The process of standardizing the new curriculum had the following stages:

- Identification and formulation of institutional objectives;
- Design of the pattern, the organization and the structure of the curriculum;
- Development of the basic course outline;
- Development of supporting manuals to implement the curriculum, such as manuals on curriculum evaluation, curriculum administration and guidance and counselling;

- Development of instructional material, such as textbooks, and self-instructional material in the form of modules

At the stage of identification and formulation of institutional objectives, the involvement of decision makers in education and people from the world of work which will make use of the graduates, was essential because at this stage the formulation of the desirable cognitive, affective, and psychomotor capabilities of graduates was very important. The Center for Curriculum Development prepared a proposal based on a study of the results of assessment and the philosophy laid down in the constitution and the decree of the People's Assembly. A national conference involving first echelon people, educational administrators, educators and academics was called to discuss and review the proposal. At this level the involvement of teachers was very limited.

At the second stage of design of pattern, organization, and structure of the school curriculum, the involvement of professional people, (subject-matter specialists, experienced teachers and curriculum designers), increased. Here the aim was to organize learning experiences to achieve the very general objectives formulated at the previous level. Questions such as: What are the curriculum areas to be studied? How should time be allocated among curriculum areas? How should horizontal and vertical relationships among the curriculum areas be planned?, need the imagination and expert judgement of a combination of people in different subject areas, who are familiar with the logic and role of certain curriculum areas in the overall curriculum plan; experienced educators and experienced curriculum designers who are used to working on relating objectives to devices for achieving those objectives. At this stage there is a danger of relying on precedent or bargaining. Each group of subject specialists tries to convince the others of the importance of its own subject in the school programme. Thus at this level, decision makers have to accommodate the interests of different groups. Time allocations and structure of the school curriculum are then decided as the basis for the third stage, the development of the basic course outline. The decision maker gives authority to a group of subject matter specialists, selected experienced teachers and curriculum designers who:

- Identify and select curriculum objectives;
- Develop them into more specific objectives;
- Select topics likely to achieve these objectives; and
- Organize these topics into a logical sequence.

These four sub-steps to be followed in developing the basic course outline are consecutive. In this work, the BP3K, with the Directorate-General of Basic and Secondary Education, established groups of subject matter specialists, selected teachers, and curriculum designers under the co-ordination of the Center for Curriculum Development and the directorates of certain school types and

levels. These groups were called development groups, and were to prepare the basic course outline. Before the basic course outline was accepted as the standard, a series of activities were carried out:

- A national workshop involving academics, selected teachers, educational administrators and professional staff of the BP3K and the Ministry. This workshop was to review and sanction the draft before it was submitted to the Minister;
- A high level meeting of Ministry officials, chaired by the Minister;
- A special meeting between the Minister, his senior staff and the Parliamentary Committee on Education.

After Ministerial approval, the next activity was to develop manuals. Up to this stage the main responsibility had been in the hands of the BP3K and its Center for Curriculum Development. The development of instructional materials and training programmes to retrain the teachers for implementation of the new curriculum was in the hands of the Directorate-General of Basic and Secondary Education. The role of the BP3K at this stage of work was mainly consultancy, to ensure consistency between the standardized curriculum and its implementation.

Since the system is so centralized, the involvement of professional associations and other community organizations in this work has been indirect, in the sense that for certain purposes, such as when the study team was identifying educational objectives, and at the sanctioning workshop, people from those realms of life were invited to participate.

Since 1970, Indonesia has adopted an approach influenced by the Tyler model of curriculum development, an approach oriented toward the achievement of educational objectives, and also known as competency-based curriculum development, meaning that curriculum is developed on the basis of types and scope of objectives to be achieved through school education. This approach is consistently followed from the level of curriculum planning to the level of instructional programming when teachers plan their lesson units. Identification and selection of educational objectives is always the first step at every level of development. The objectives identified are then used as the criteria for selecting content, methods and facilities. This approach requires the curriculum developers, from the level of curriculum planning to the level of instructional programming, to adopt a planning model using systems approach principles. This is in line with the assumption that schools should provide essential and relevant learning experiences effectively and efficiently.

In developing the basic course outlines, the parallel approach has been adopted. Curriculum development groups for mathematics, science, social studies, languages (national and foreign), art, sport and health, religion, and the Pancasila moral education were established under the co-ordination of a national steering committee. Each group was assigned to develop a basic course outline following an objective-oriented curriculum development approach. These groups developed only proposed basic course outlines to be reviewed and sanctioned later by national workshops.

Issues

Centralization

The argument for decentralization of curriculum development, in order to make curriculum more relevant to the needs of the local community, is very popular and scientifically sound. However, the experienced professional people needed for decentralized curriculum are not available throughout the country, and decentralization would result in varying curriculum quality in different regions. Equal distribution of high quality education is a national goal, and for this reason Indonesia still adopts a standardized national curriculum. This does not mean that Indonesia does not recognize the importance of a curriculum relevant to local and regional needs. With professional training, a decentralized system of curriculum development can eventually be developed.

Rural curriculum

Since one of the products of education is social mobility, modern education is not to be confined to urban dwellers, and Indonesian citizens need common characteristics and competences, so that they can participate constructively in the process of national development. This means that children from the rural areas should have the same chance to master intellectual, affective and psychomotor capabilities as their fellows who happen to be born and to live in an urban community. It is true that to master the same competences, children from different social backgrounds need to learn differently. Thus it is not at the level of determining general objectives, nor at the level of designing the basic structure and organization of the curriculum or at the level of developing the basic course outline, but at the level of developing instructional programmes and teaching-learning strategy that different approaches are needed.

Quality in mass education

With the policy of universal access to education comes the problem of training 500,000 dedicated and competent teachers instead of the 5,000 previously needed, and the problem of heterogeneous intellectual capabilities and cognitive backgrounds which were not part of an elite education.

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The basic problem is how to develop a curriculum system that will support the effective operation of a mass system of education with the quality of teachers that the system can produce. All innovative activities in Indonesia, especially through Development School Pilot Projects, are planned to solve this crucial problem.

Programmes

Major programmes of the Center are:

- Development of a model of a comprehensive curriculum/system for elementary-secondary school, through a series of research and development activities, using eight sets of pilot schools; an on-going project (the Development School Pilot Project mentioned above);
- Standardization of the national curricula for elementary schools, junior and senior general high schools, senior vocational schools and teacher training schools for elementary school teachers (1974-77);
- Development of prototype elementary science kits;
- Development of models for formative and summative evaluation using criterion-referenced tests;
- Experimentation on mastery learning strategy;
- Development of guidance and counselling programmes to support the implementation of curriculum innovation;
- Development of skills education programmes as a part of general education;
- Development of self-learning packages for in-service teacher training programmes;
- Planning for the introduction of the modular instructional system as a teaching-learning strategy in higher education;
- Planning for a cognitive development study and a readability study;
- Planning for development of various innovative teaching-learning approaches in science, mathematics, and social studies.

Evaluation as a tool of policy review

The main task assigned to the newly established Office of Educational and Cultural Research and Development (BP3K) in 1969 was the horizontal and vertical assessment and evaluation of all dimensions of the educational system including policies of curriculum development. A cluster of Task Forces was established. Each Task Force planned its activities to include a series of national conferences, seminars and workshops to enable all people concerned with education in the nation to be involved.

The BP3K has now established a special center dealing with policy research, evaluation and assessment. This center is known as the Center for Educational Research, and will continuously assess the quality of education as influenced by the implementation of curriculum reforms. At least once in five years, a national assessment of the quality of education is to be conducted. The last assessment, in 1974, measured the effectiveness in terms of student achievement, of the curriculum developed in 1969 and of other innovative ideas introduced in the early 1970s. Other policy research includes an evaluation programme developed to measure the effectiveness of projects. An example is a project evaluating textbook writing activities. A follow-up study of textbook writing has been conducted to get feedback on the effectiveness of the use of the textbooks. The findings are then used to improve both the procedures for writing and the quality of the textbooks.

There are thus two types of evaluation programme: those which improve the quality of curriculum material developed, and those which evaluate the overall impact of the reform in terms of student achievement and teacher performance. A team of evaluators is established, consisting of experts in testing and measurement of subject-matter. In planning the programme the team always works closely with the people who developed the instructional materials. Teachers participate in developing the instruments as well as in executing the programme.

A monitoring programme has also been developed to give immediate feedback on problems faced by teachers in implementing the 1975 curriculum. For this purpose, a joint team from the BP3K and the Directorate-General of Primary and Secondary Education was established, and as a result, in-service training programmes have been conducted and facilities necessary for the implementation of the curriculum have been improved.

The Development School Pilot Project

Since 1972 Indonesia has adopted two parallel curriculum reform programmes: a short-term programme aiming at immediate improvements in the system by such means as writing new textbooks and introducing new teaching methods to facilitate the implementation of the standardized curriculum; and a long-term research and development programme to develop a system that might replace or change existing practices in part, or the whole system of school curriculum.

The Development School Pilot Project is a programme of this latter type. In this project the following model has been adopted:

- Conduct research and assessment on the quality of the educational system in terms of its internal efficiency as well as quality of output. This was done in 1969-72, and the framework included the assessment of educational needs and problems felt by society.

- Formulate general objectives to be achieved and identify problems to be solved in order to achieve the objectives;
- Generate alternative ways of solving educational problems in order to achieve the objectives;
- Select the potentially best and most appropriate methods to be adopted;
- Develop a master design to implement the programme;
- Develop a general design for the curriculum system;
- Develop instructional materials and all necessary supporting materials;
- Develop a built-in evaluation programme to evaluate both the effectiveness and the problems and difficulties faced in the implementation of the programme;
- Put the programme into a first trial on a pilot scale;
- Revise the materials based on the feedback from the systematic evaluation programme;
- Conduct a second trial of the revised materials as well as trialling them in a natural setting;
- Develop supporting programs such as in-service training of teachers and other personnel, provision of educational media and facilities and administrative support systems needed for implementation;
- Conduct second revision of the materials for large scale dissemination;
- Study the cost implications of implementing the new programme;
- Prepare the implementors and other personnel;
- Work out plans for large scale dissemination.

At present the Development School Pilot Project is at the second trial stage.

JAPAN

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Background

For the past three decades, Japan has striven for universal access to education. As a result of this, about 90% of 5-year olds are in kindergarten or nursery school. The enrolment ratio of 6-year olds to 15-year olds at elementary and lower secondary school is almost 100%, and about 94% of 16 to 18 year olds are enrolled in upper secondary school. There is a total of 974,000 elementary, lower and upper secondary teachers and 100,000 kindergarten teachers. In addition, more than 38% of young people of 19 years and above are enrolled in institutions of higher education.

The educational level of the population is expected to continue to increase. At the same time the policies of democratization of education and universal access to education will be extended.

Some people say that the Japanese school curriculum is well-balanced, but lacks sufficient flexibility for children to be creative. Others have claimed that curricula in Japan are too uniform. However, curricula in fact vary according to the developers, the schools and the teachers. Indeed, the process of curriculum development in Japan is far from uniform. In the Ministry of Education, Science and Culture (MESC) there are a number of subject specialists who assess, review and examine curriculum development strategies. At local/district level, school advisers at the local/district boards of education assess, review and examine curriculum designs and curriculum development strategies. They visit the schools as occasion demands to give advice on school practice to the teachers or to consult with the heads of schools about school management.

After 1945 the teaching content of elementary and secondary education was radically changed and schools were strongly encouraged to take in the area of curriculum development. In its Course of Study, the Ministry introduced a new subject area called 'Social Studies'. These Courses of Study were to be treated as points of reference to show the teachers standards for curriculum organization, and not as the mandatory basis of classroom instructional activities. The State textbook system was abolished, and instead, the Ministry introduced a textbook authorization system by which it approved textbooks of a certain standard which were edited and published by private companies. Schools could select a textbook from among several approved textbooks. When publishing textbooks for elementary and secondary schools, therefore, publishers must now submit manuscripts in draft form to the Ministry for authorization. Textbook inspectors at the Ministry examine the manuscripts submitted.

Curriculum revision and diffusion

School curricula in Japan were revised several times during the past three decades, in response to socio-economic and cultural developments and corresponding changes in the public's educational demands. The general procedure for revising the standard school curriculum is that, when the Minister of Education, Science and Culture feels revision of the existing curriculum to be necessary, he officially refers to the matter to the Curriculum Council, which is one of the advisory organs attached to the MESC. The Curriculum Council consists of sixty members representing the economic, political, educational and cultural worlds of Japan. The council starts deliberations when it is officially consulted by the Minister of ESC. The relevant divisions of the MESC serve the council as secretariat. During the deliberations, research findings and other related survey findings are used as a basis for studies, and trialling, if necessary, is conducted by pilot schools and kindergartens designated by the MESC. The Curriculum Council, after a series of studies on the matter, submits a recommendation on the curriculum revision to the Minister of ESC. The revised Courses of Study for each school stage are then elaborated by the Courses of Study compilation committees formed in the MESC on the basis of this recommendation. The MESC compiles and publishes for teachers guidebooks/manuals on each school subject.

At the local level, the boards of education handling the executive functions of educational administration in each district organize, in collaboration with the MESC, study meetings for principals and teachers, to acquaint them with the new curriculum. Also, school advisers at the boards of education regularly visit schools to give the teachers direct guidance and advice on the implementation of the new curriculum. At school level, the principal is responsible for developing and implementing the curriculum for his own school in accordance with the curriculum and the Course of Study set forth by the MESC.

In addition, study groups of teachers are organized within a school or at inter-school level in each district or at national level. Participation in the study groups is generally on voluntary basis. Each teacher belongs to one or two such specific study groups, though normally elementary school teachers are general teachers dealing with all school subjects. The study meetings, usually held after school hours, at weekends or during vacations, are very helpful for teachers to exchange views and ideas on development of curriculum strategies.

Expenditure for in-service training is covered by the central government, the boards of education or the teachers themselves according to the nature of the programmes. In general, in-service training programmes in Japan are sponsored, jointly or independently, by the MESC and boards of education. Most of the programmes are large in scale, and aim to keep teachers abreast of newly developed theory and practice in teaching, as well as of changes in school administration. Also research by teachers on a voluntary basis is

active and widespread. In Nagoya City, for example, a voluntary teachers' research meeting is held twice a month on Saturday afternoons. At every meeting the attendance totals as many as 300 teachers. In one case a voluntary meeting of teachers of this sort has been supported by the board of education and the NHK (Japan Broadcasting Corporation). In 1979, the meeting was held in Gifu City in November, and a teaching demonstration was arranged there using both TV and radio. This demonstration was broadcast to the public as well as to the participating teachers. A discussion session followed the viewing. About 13,000 teachers from all over the country attended this 2-day meeting. This was the thirtieth year that such a meeting on the application of broadcasting to teaching has been held.

Japan may well be ranked with other world leaders in the area of audio-visual education, especially in the production and application of techniques. Teachers often utilize teaching materials from the broadcasting media. Among educational TV programmes used for classroom teaching as well as in-service training, the most popular ones are on moral education, science and social studies. Their school utilization rate is between 50% and 80%. Thus, mass communication media play an important role in school education and in-service training.

Educational journalism is very popular; there are more than 30 different monthly educational magazines each with a circulation of more than 70,000. Among the magazines on in-service training of teachers, one has a monthly circulation of more than 43,000.

The National Institute for Educational Research (NIER)

The National Institute for Educational Research of Japan was established in 1949. It is under the jurisdiction of the MESC and is fully financed by the national budget. It is not a part of the MESC but an independent institution, like a national university, with a mandate to conduct practical and basic educational research.

Radical changes were taking place in every branch of education throughout the country at the time when the Institute was established. The Government formulated the policy that educational innovation and expansion were pre-requisite to the reconstruction of the nation, and in the midst of economic exhaustion after the war, ventured new measures such as school system reform, extension of the compulsory schooling period, introduction of a co-educational system and so on. The Government paid due attention to the importance of research in education in implementing these educational innovations, drawing strongly on the findings of previous educational research.

The Ministry of ESC established a strong Bureau of Research and prepared to conduct educational surveys and statistics projects. The Boards of Education Law decreed that the secretariats of prefectural boards of education should have their own sections for educational surveys and statistics. Establishment of education research institutes by local boards of education was also recommended.

A national institution of higher learning for teacher education was established in every prefecture. The eight most prestigious universities, including Tokyo University, had their education departments so organized that educational research could be conducted systematically at the university level. These measures reflect the strong interest of the Ministry at that time, in promoting educational research.

Thus a firm policy of establishing an educational research system for the promotion of educational innovation was adopted. However, considerable controversy centred on whether the Ministry should establish an educational research institute within its own jurisdiction in addition to the education departments at universities. A clear and strong voice spoke against the establishment of such a national organization, saying that as long as the education departments at universities conducted pure scholarly educational research this should be more than enough. It also said if the Ministry were to implement its educational policies exactly, it should give top priority to the training of administrative and educational staff.

Functions

It was amidst this climate of feeling just thirty years ago that the NIER was established, at the period when education departments were established at the prestigious national universities. The decision to establish the NIER was both political and far-sighted in that as universities have to determine their own research programmes, there could be no guarantee that research would be sufficiently practical and empirical to contribute to educational policies for innovation. At the same time, it was judged that it might also be difficult for the inner organization of the Ministry to conduct scientific and objective research. The NIER was thus inaugurated as an independent institute under the jurisdiction of the MESC, with the aim of conducting high standard, practice-oriented research using academic and scientific methods. It undertakes studies, research, investigations and experiments and convenes seminars, workshops and meetings at international, regional and national levels.

The NIER at the moment consists of an office of co-ordinators for planning and research, four research departments, (I-IV), an external service department, a research centre for science education, a general affairs department, and a library of education. The Institute has 103 full-time staff, 79 of whom are research staff and the remainder are clerical staff. The research staff, in addition to their respective duties, provide consultancy services to the MESC, the Japanese National Commission for Unesco, and other public as well as private educational institutions and organizations.

One advantage the NIER has in terms of research activities is that in conducting a positive analysis and synthesis of a subject,

it is in a position to draw on data from a co-operative network of universities, boards of education and education institutes or centres scattered throughout the country. For example, in 1975, the NIER conducted a nation-wide survey of about 18,000 pupils, on their learning achievements and their attitudes towards learning in relation to different school subjects. Learning achievements were identified in terms of students' attainment of the objectives set out in the Courses of Study at the respective school levels. Results are to be published in 1981. The kind of project would seem to be a possible foundation for curricular design and planning.

Research projects currently undertaken by the NIER, most of them being directly or indirectly concerned with curriculum development, are as follows:

National level

- Study on effects of infant education;
- Study on computer-assisted instruction in mathematics teaching;
- Study on the development of teaching materials for developing scientific ways of thinking at the lower grades of elementary school;
- Study of the evaluation of school curriculum in the light of lifelong education;
- Study on functions and roles of work experience in education;
- Study on the development of curriculum for environmental education;
- Study of basic trends in moral education;
- Study on the development of effective models for teacher education.

International level

- Second Mathematics Study for International Society for the Evaluation of Educational Achievement;
- Pacific Circle Study on education for international understanding;
- Comparative studies on:
 - directions for improvement of teacher education;
 - textbooks and teaching materials in the fields of social studies and home-making;
 - moral education.

Unesco-NIER regional projects:

- Seminar on educational research in relation to educational reform in Asia and Oceania;
- Task force meeting for joint study of moral education in Asia;
- Regional workshop for the development of appropriate aids for science education in Asia;
- Workshop for compilation of a comparative study of moral education in Asia.

The NIER has an excellent record in comparative education and has staff members of the first quality in this field. To say nothing of our experts on western education, we have experts on education in Korea, China, India, and in the ASEAN countries. During the early sixties, the NIER also began an international survey on achievements in mathematics and natural science in co-operation with the International Association for the Evaluation of Educational Achievement. Since 1966 the NIER has inaugurated its Unesco-NIER Regional Programme for Educational Research in Asia in collaboration with the Unesco Regional Office for Education in Asia.

Relations to other institutions

There has been a close relationship between research projects and administrative policies. In its research projects the Institute has had strong support and collaboration from outside, and of course, the Ministry does not formulate national educational policies just on the basis of outcomes of the research activities of the Institute. There are as many as 960 institutions and organizations involved in educational research, surveys and in-service training.

Many of the faculties or departments of education at the universities are of course for pre-service training for elementary and lower secondary schools. Some are for the study of pedagogy. The institutions for educational research attached to universities are by and large specialized in specific fields of study such as educational technology, information processing, special education, etc., but their fundamental nature is the same as that of other faculties or departments of education at universities.

Table 1: Number of Institutions and Organizations for Educational Research, 1978

Type of Institution	Authority responsible for establishing institutions				
	National	Prefectural	Municipal	Private	Total
A. Institutions	121	144	403	292	960
1) Independent institutes or education centres	5	79	384	38	516
2) Establishments attached to universities or their faculties	42	-	-	12	54
3) Divisions of administrative agencies	4	47	9	-	60
4) Universities with faculties or departments of education	70	4	-	58	132
5) Junior colleges with departments of education	-	14	-	184	198
B. Organizations	-	-	-	221	221
1) Academic societies	-	-	-	36	36
2) Organizations for school education	-	-	-	140	140
3) Organizations for social education	-	-	-	45	45

The research and survey activities of administrative agencies of course relate to the immediate needs of administration and cover collection and processing of information, materials and statistics needed for educational administration and policy-making, gathering of information on the state of educational activities and so on.

Of more than 500 independent public or private educational research institutions, there are, in addition to NIER, four national research institutions. These are the National Institute for Special Education, the National Training Institute for Social Education, the National Centre for University Entrance Examinations, and the Development Centre for

Broadcasting Education. The National Institute for Special Education has a school attached which provides education for mentally or physically handicapped children. The Institute conducts research not only into education for the blind and deaf but also into education for children who are mentally retarded, physically handicapped, emotionally disturbed, have severe and multiple handicaps and who are physically weak. At the same time, it organizes professional and technical in-service training courses for staff members in the field of special education.

The National Training Institute for Social Education provides in-service training courses not only for social education officials from educational administration agencies, but also for leaders in social education in the private sector.

The National Centre for University Entrance Examinations was established in 1977 to deal with the preparation and marking of papers for the joint achievement test which forms the first stage of the entrance examination for national and public universities. The Development Centre for Broadcasting Education focuses on improvement of tertiary education through broadcasting, and conducts studies on the development of programmes and instructional methods which can be used in broadcasting.

The NIER, in close collaboration with institutions both inside and outside Japan, conducts comprehensive and practical research on educational thinking, comparative education, educational systems, teaching content and methods, and so on.

As with the educational research institutions established by the national government, some educational research institutions established by prefectural or municipal boards of education are assigned individual missions, such as research on science education, education for information processing, agricultural education, and so on, but the majority of these prefectural or municipal institutes deal with general educational activities in the local area with particular emphasis on school education activities.

Local educational research institutions are contributing, jointly with school authorities and school teachers, to the enhancement of educational standards through improvement of day-to-day educational activities in schools, improvement of instructional methods, and upgrading of teacher quality. Many of these prefectural or municipal government educational research institutes have more than 30 years' experience, because during the post-war period of educational reform, many local authorities established independent educational research and survey systems to collect educational information from both inside and outside the region, to disseminate ideas, innovative content and methods to classroom teachers.

These institutes have formed a voluntary nation-wide network with the NIER at its core, called the National Federation of Educational Research Institutes of Japan. Through this network, local institutes conduct joint co-operative research projects and promote exchange of outcomes of their research projects. There were only 27 foundation member organizations, but in the past 30 years more than 200 educational research institutions have become affiliated with the Federation.

So far, it has conducted 16 nation-wide research projects including: 'Study of the Improvement of Instructional Activities', 'Study of the Education and Attitudes of Working Youth', 'Study of Children and Family', 'Study of Systematization in Education', 'Study of Classroom Activities in Relation to the Development of Learning Abilities', and so on. All 28 reports have been published by the Federation.

Japanese educational research seems to be rather special in that so many independent research institutions operate and conduct practical educational research projects and in-service training programmes. Through publication of reports, through seminars and study meetings, and through participation by researchers in councils and committees both public and private in nature, research outcomes penetrate the area of education and are utilized in the formation of educational policy. We cannot expect direct and immediate effects from educational research, but by creating an atmosphere conducive to its acceptance we can expect research outcomes to have a marked influence on the development of education.

The National Federation of Education Research Institutes of Japan plays an important role in the dissemination of research outcomes. The exchange of findings which is encouraged amongst member organizations encourages utilisation and dissemination of research outcomes at the national level.

The NIER, as one of APEID's Associated Centres, organizes three or four regional workshops and seminars a year. In this way the NIER helps to improve curriculum development, develop science education, promote moral education, and strengthen educational research activities in the Asian region. The exchange of information in these areas is one of the outstanding features of the programme.

The NIER also participates in co-operative projects in international education promoted by the OECD. The Institute is the national centre in Japan for the International Association for the Evaluation of Educational Achievement.

Issues

Some major issues in Japanese education are:

- Providing the child with education which eventually fully develops his individual character;
- Education for Japanese children living abroad and for those having returned to the country from abroad;
- Providing children with an education building up closer connections with people in Asia and Oceania.

Movements in curriculum development for both the present and the future are strongly influenced by an awareness of these problems. New textbooks compiled for the new Course of Study for elementary schools (which will be in force in 1980) reflect this awareness, emphasizing pacifism and a spirit of international co-operation.

In forecasting future curriculum needs, Japanese people seem to agree on the following points:

- On the basis of future technological forecasts for Japan, we might choose to emphasize the following important concerns: food resources, energy, communications, ocean development, life sciences and development of water resources in co-operation with various Asian and Oceanian peoples. Our domestic schools have accepted several thousand pupils who have benefited from visiting Asian and Oceanian countries.
- Many teachers recognize the importance of emphasizing Asia and Oceania in teaching materials. Post-war pupils seem to have discovered Asia, but pupils at the beginning of next century will discover Asian-Oceania or the global Pan-Pacific world.
- A number of teachers and scholars will continue their efforts to push new types of teaching materials (concerning Asia-Oceanian regions) into social studies courses.
- The fundamental function of school will be firmly established as that of providing a basis for lifelong education based upon international understanding.

MALAYSIA

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Background

Educational programmes are highly essential components of any national development programme. It is through education that desirable values and healthy attitudes may be inculcated, required skills developed, and necessary preparation for life provided. Education essentially builds a person, who is an important constituent of a nation. Hence, building a nation means building a person, and vice versa. It therefore becomes understandable that educational programmes are designed in line with, or to suit, national philosophies, ideals and aspirations.

Malaysia's philosophies, ideals and aspirations are determined to a large extent by its two main characteristics: it is a developing country and it is composed of multicultural societies. During the past decade or so, the major development thrust has been towards the eradication of poverty and the reduction of economic imbalances between the different ethnic groups and within different geographical regions.

These measures are essential in order to achieve national integration and unity among the different ethnic groups, so as to ensure the future stability of Malaysia as a political entity. The national ideology, NEKUNEGARA, formulated in 1970, expresses the beliefs and principles of the nation and lays down the basic framework for national unity. It declares that Malaysia is dedicated:

- To achieving a greater unity of all her people;
- To maintaining a democratic way of life;
- To creating a just society in which the wealth of the nation shall be equitably shared;
- To ensuring a liberal approach to her rich and diverse cultural traditions;
- To building a progressive society which shall be oriented to modern science and technology.

National unity is to be pursued in accordance with the above principles by means of the New Economic Policy, formulated in 1970, which comprises two objectives:

- To eradicate poverty among all Malaysians;
- To restructure Malaysian society so that the identification of race with economic function and geographical location is reduced and gradually eliminated.

Both objectives can be realized through the rapid expansion of the economy over time. The ultimate aim of the policy is to allow for a continuing improvement of the welfare of every Malaysian, but this must be accompanied by the transformation of the economic system, i.e. from a racially compartmentalized system to one in which, to quote the Third Malaysia Plan 1976-80, 'the composition of the Malaysian society is visibly reflected in its countryside and towns, farms and factories, shops and offices...'

Education system

Prior to Independence there were separate school systems for each of the major racial groups as well as 'English' schools for those in the urban areas. In 1956 a comprehensive review of education in the country was made. A special committee was set up to examine the existing educational policy and to make recommendations with a view

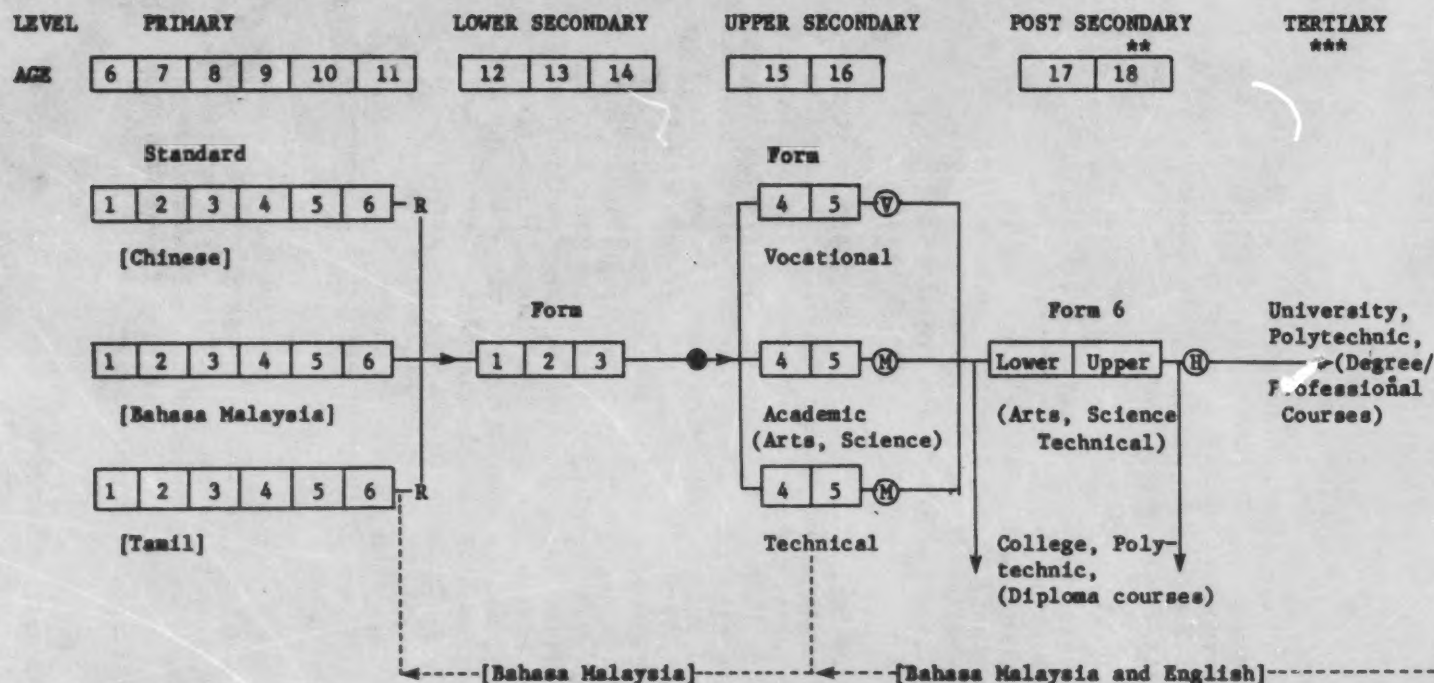
... to establishing a national system of education acceptable to the people of the Federation as a whole which will satisfy their needs and promote their cultural, social, economic and political development as a nation, having regard to the intention to make Malay the national language of the country whilst preserving and sustaining the growth and the language of the other communities living in the country.

The report of the committee became the Education Ordinance of 1957, thereby establishing the legal foundation of the national education policy that is still in operation today. The three fundamentals of the policy were the introduction of Malayan (now Malaysian) syllabi common to all schools, the establishment of teacher training programmes and the provision of a place in the primary school for every child. The recommendation to introduce common syllabi to all schools led to the establishment of a syllabus and timetable committee. Curriculum was viewed as the specification of content to be taught in a particular subject for the different grade levels, including the time allocated for each subject. The curriculum development strategy employed was to establish an ad hoc committee on a part time basis, whose task was merely to draw up the syllabus for the particular subject. The draft syllabus produced by the committee was circulated to teachers for comments, and based on these comments it was modified and finalized. The finalized draft was put to 'trial' in the schools. The feedback received from the 'trial' was then considered and the necessary amendments made. Thereafter the syllabus became the approved syllabus for all schools to adopt as a guideline.

During the mid-sixties it was recognized that curriculum change required more than specifying topics for a particular subject or altering examination specifications. In some cases major reconstruction in terms of objectives, content and teaching methods were seen to be not only desirable, but urgently needed. The Schools Division of the Ministry of Education began to be involved in such attempts at curricular improvements, particularly in the areas of science and mathematics.

With the Government's emphasis on manpower development, particularly in science and technology, the beginnings of a Science Centre were set up in 1969. The Second Malaysia Plan (1971-75) made special provision for

FIGURE 1: SCHOOL SYSTEM OF MALAYSIA, 1979*



[] indicates main medium of instruction.

Public Examination

- Lower Certificate of Education (LCE)
- Ⓥ Malaysian Vocational Certificate (MVC)
- Ⓜ Malaysian Certificate of Education (MCE)
- Ⓢ Higher School Certificate (HSC)

R: Remove classes are transitional classes of one year's duration provided to give intensive language lessons to pupils who have to change their medium of learning from Chinese or Tamil at the primary level to Bahasa Malaysia at the secondary level. An extra year must be added to the ages of pupils who proceed from the Remove classes.

* Adapted from : MALAYSIA, Ministry of Education. ** Education in Malaysia 1974, p. 98.

** Sixth Form classes, teacher training institutions, polytechnics and other institutions offering Diploma Courses.

*** Universities and other institutions offering Professional Courses.

the establishment of such a centre to serve as the nerve centre for improvements in science and mathematics programmes including teaching strategies. Having established this initiative in curricular improvement, a small study team was formed in 1971 to review procedures and practices for curriculum development for the entire school curriculum. A proposal was put forward to stabilize and systematize curriculum development by establishing a curriculum centre. The proposal was accepted and the Curriculum Development Centre (CDC) was set up in 1973. Currently it is a professional centre involved in the planning and development of various curriculum projects for schools. Some of these are carried over from the Science Centre (which no longer exists) and other divisions of the Ministry of Education, while others have been initiated within the centre.

The Curriculum Development Centre

The Curriculum Development Centre (CDC) is an action-oriented national institution serving all primary and secondary schools in Malaysia. Its main aim is to improve the quality of education in Malaysian schools, bearing in mind the national goals as reflected in the First and Second Malaysia Plans. Hence the CDC's functions are directed towards the unification of the multicultural groups via a common language of instruction, standardization of curricula, and equalization of imbalances in educational and economic opportunities.

Curriculum, as perceived by the CDC, is 'what pupils learn, how they learn it, how teachers help them learn, using what supporting materials, styles and methods of assessment, and in what kind of facilities'. It is from this perception that the many functions of the CDC are drawn. Essentially the functions are representative of, or in fact part and parcel of, the processes involved in the development of any curriculum. The figure below illustrates these functions or processes and also the order in which they normally operate.

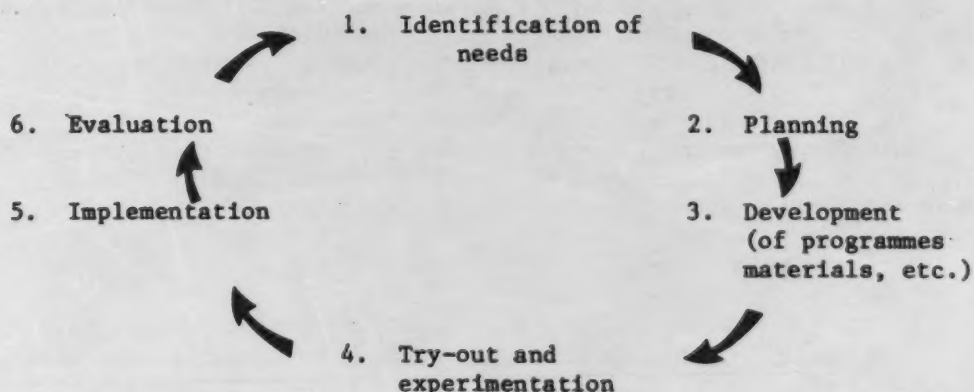


Figure 2

It is not difficult to see the implications of the functions where other 'outside' factors are concerned. Curriculum development, in the first

place, cannot and should not be viewed as the responsibility of the CDC alone. There are other divisions of the Malaysian Ministry of Education dealing with matters like examinations, textbook evaluation, teacher training and educational media services, to name a few. The CDC's programmes affect and are affected by these agencies. More than that, the CDC is dependent upon and is depended on by them. Close co-ordination and collaboration between the CDC and these other divisions is undeniably important, and this the CDC has established. As well as Ministry of Education personnel, teachers are involved actively in the CDC's programmes by means of formal and informal discussions, questionnaires, workshop participation and other means. Teachers are at the grassroot level of the implementation of any curricular programme, and the CDC regards them as highly important agents in the determination of the success or otherwise of its programmes.

Bearing in mind all the different agencies and processes involved in curriculum development, therefore, it becomes apparent that what Figure 2 shows is in fact an over-simplified representation of the functions and the sequence of their operation. Often, with an unexpected turnover of events or emergence of problems of a particular nature, steps 1 to 6 may not be taken in such logical order as that shown. Sometimes retracing of the steps or crossing over is inevitable, depending on the issue, problem or need.

Approaches to curriculum design

In general the CDC, in its operations, does not allow itself to be rigidly and absolutely tied to any theoretical curriculum design or model. This is because Malaysia is still in the category of a developing country, and in striving to keep up with the rapidly changing 'outside world', has to continually accomodate its growing needs and to adapt, adjust, modify, update and upgrade where and when necessary. Hence the strategy chosen is one which is flexible yet positive in its direction.

In practice, the objectives model is to some extent adopted and adapted. In attempting to design a particular curriculum, the CDC looks towards various sources from which curriculum objectives may be derived, for instance studies on cognitive development of pupils, studies of pupils' socialization process outside the school, and suggestions from subject specialists, as well as the national philosophy and ideology. These sources will determine the general aims and direction of the particular curriculum concerned, which will in turn serve as a guideline for the formulation of more specific instructional objectives. Specifying clearly the objectives of a curriculum, is a way of ensuring that pupils learn and develop in a manner best suited for them (and the nation).

The CDC's moral education, geography and English projects are examples where the objectives model has been adapted as a rough design and where flexibility (out of necessity) is incorporated within the specificity of the objectives spelled out. In drawing up the objectives for the moral education curriculum (an entirely new curriculum), care was taken to ensure that there was room for alternative strategies, so as to cater for the varied values of the people of various religions, traditions and ways of life, and that the curriculum was at the same time in line with the universal moral values spelled out in the RUKUNEGARA mentioned earlier. The new geography curriculum for primary schools has included a new

emphasis in its objectives: the child should be able to apply his acquired knowledge to his immediate environment, depending on the locality of his home; this calls for flexibility in teaching strategies. In the English communication syllabus for secondary schools, due emphasis is placed on speaking, followed by reading and writing. The main objective of the programme is for pupils to master the requisite skills in communication that will enable them to work successfully in the commercial and public sectors, irrespective of their background. A certain amount of flexibility within the objectives is again necessary here in view of the fact that pupils' exposure to and ability in the language vary considerably.

Stating instructional objectives in specific terms is thought to lead ideally to a common, clear, correct interpretation of the curriculum by all teachers, who will in turn transmit the necessary process to their pupils in the ways prescribed. However there is always the unavoidable doubt of whether each specification would in reality result in the manifestation of methods and means as intended. Being specific is, admittedly, more helpful, more constructive, than being vague. But how specific can we be? How specific should we be? How specific do we want to be? In the moral education, geography and English projects mentioned earlier, we have noted the need to have a certain amount of flexibility incorporated in our specific statement of objectives. This type of statement calls for more than just direct interpretation by teachers; they need to judge, to modify and to use their discretion to decide which alternative strategy will suit their particular set of pupils. Here we are less specific, and teachers are given a certain amount of freedom. Could this freedom lead to misinterpretation and hence mis-transformation of our original intentions? On the other hand, if we are too rigid in our specifications, we may have to face negative consequences - it is not unreasonable to anticipate that too much prescription may kill teachers' initiatives, curb their talents and result in our dehumanizing the process of education.

The approach taken by the CDC is essentially the centre-periphery approach. The central and national nature of the CDC, and the common curriculum, call for this approach. However, as mentioned earlier, active involvement of other agencies, including representatives of the implementers, i.e. the teachers, at the different stages of the curriculum development process, is a feature of the CDC's endeavour. For example, in the formulation of the moral education and geography syllabi, State Curriculum Committees have been very deeply involved. Hence, to assume that there is total centralization is incorrect. To put it simply, we may view the CDC's approach as one of the centre-periphery type where the boundary between the centre and the periphery is diffuse, and where central and peripheral elements move in and out of one another's regions purposefully. This kind of approach not only keeps curriculum developers in constant contact with the realities of the classroom, but also ensures more efficient and reliable dissemination. In order to picture the actual processes and agencies involved in curriculum development at the CDC, refer to Figures 3 and 4.

Programmes

The structure of the CDC's activities and programmes is based on the national ideals and the structure of the nation's education system as a whole, the latter of course being influenced by the former.

FIGURE 3: CURRICULUM DEVELOPMENT: PROCESSES
AND AGENCIES

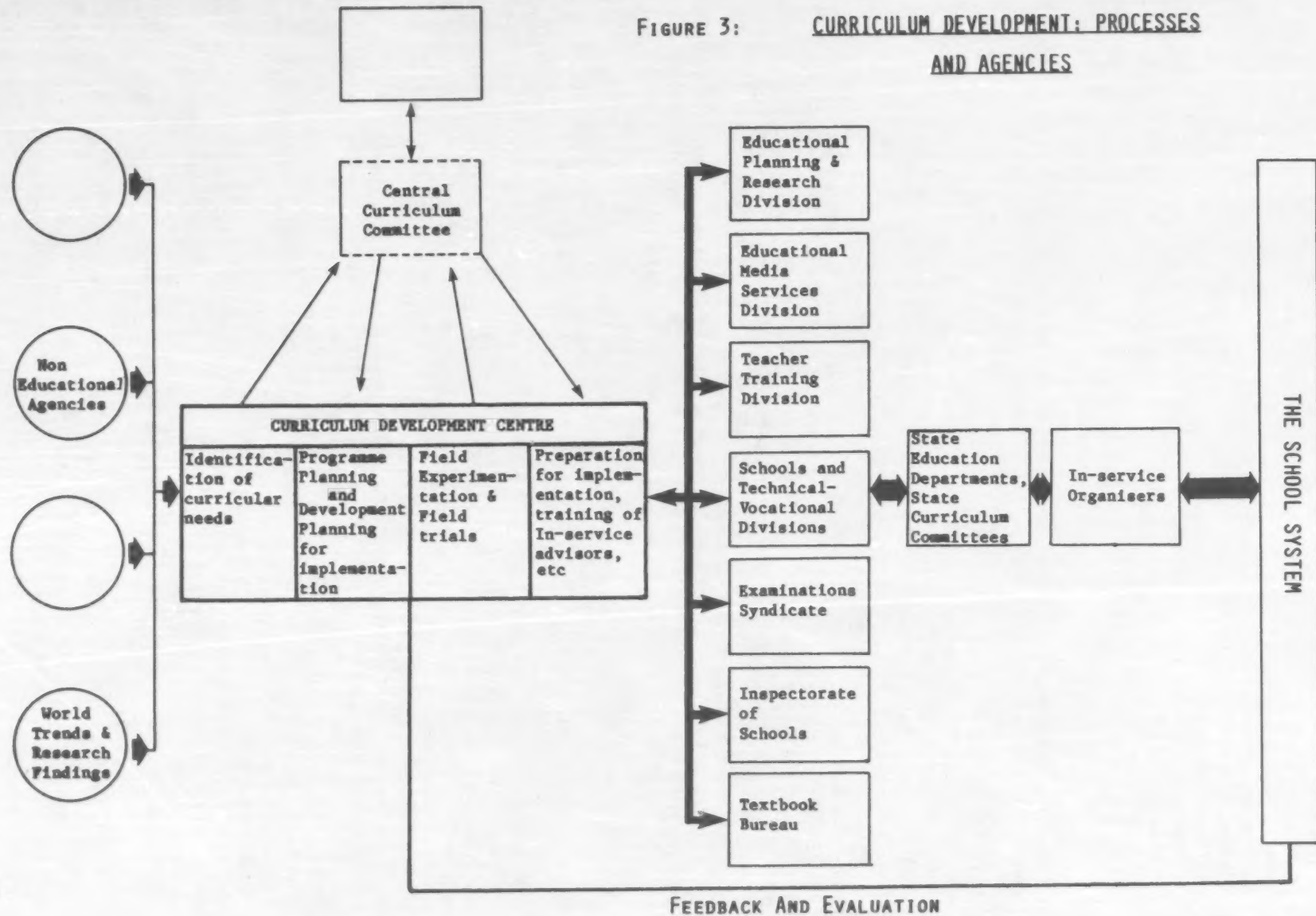


FIGURE 4: DIAGRAMMATIC REPRESENTATION OF CURRICULUM
DEVELOPMENT AND IMPLEMENTATION

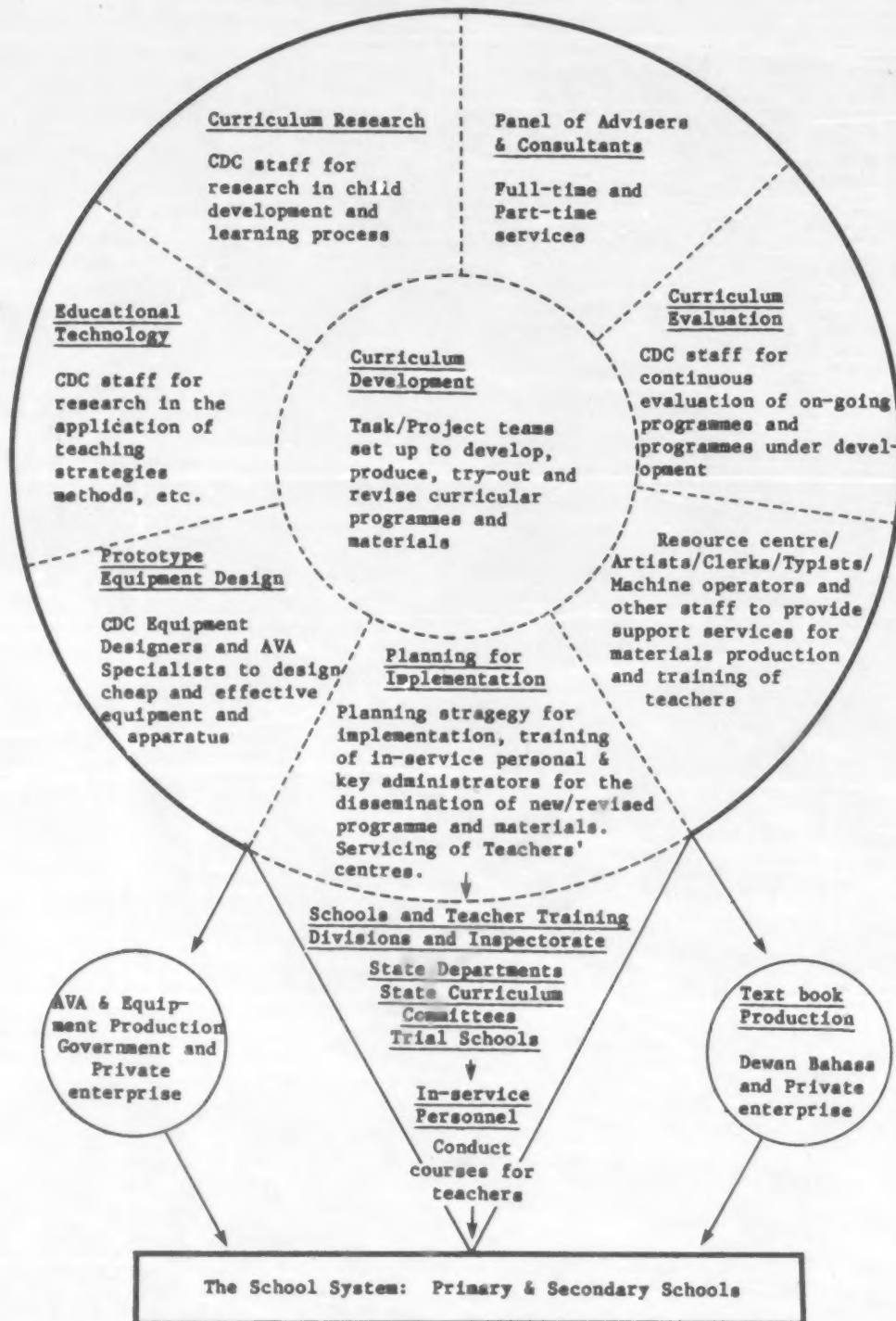
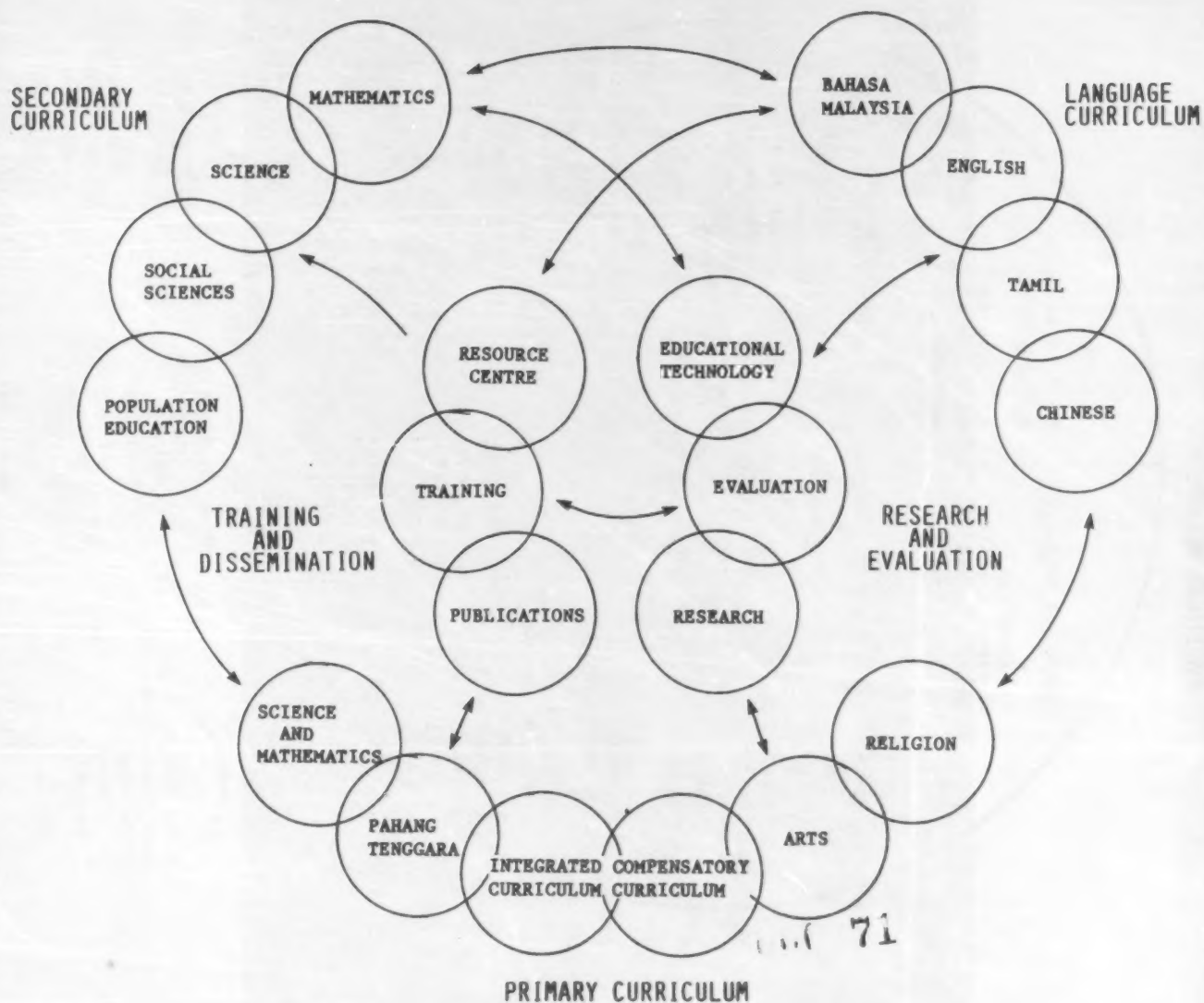


FIGURE 5: PROGRAMMES AND PROJECTS OF THE CDC



As can be seen in Figure 5, there are five main programme areas in the CDC, dealing with:

- Language curriculum;
- Primary curriculum;
- Secondary curriculum;
- Training and dissemination;
- Research and evaluation.

Emphasis placed on language is in accordance with the national policy of using Bahasa Malaysia, the national language, as the main medium of instruction in the primary and secondary schools, with English as an important second language. This programme area also serves a central function - it provides consultancy services on specific language matters to all the other curriculum areas. The components of the language programme area are Bahasa Malaysia, Malay literature, English, Chinese and Tamil language projects.

Primary and secondary curricula are treated in two separate programme areas because of their differences in nature, emphases and problems. Primary education is essentially more general than secondary; pupils are exposed to many subject areas. Also, studies are far less in-depth and due emphasis is placed on the acquisition of basic skills. There is also the trend towards integration of themes in the primary schools, while a certain amount of specialization is a common feature of the secondary curriculum. In line with the Second Malaysia Plan's emphasis on science and technology, the CDC appreciates the need for continual updating and upgrading of the secondary science and mathematics curricula, and this is dealt with in the respective project areas. Social studies, which pupils start learning during the latter part of their primary education, are classified under the secondary curriculum area because a major portion of the programme is covered at the secondary level. In the secondary area, there is now a gradual shift in emphasis from science and mathematics to the social studies. The overall theme of the latter programme reflects a central concern, that is national unity. It is here that we see the ideals stated in the RUKUNEGARA being directly manifested.

All the three programme areas mentioned thus far, though considered separately, operate in principle on a co-operative basis, being so closely linked in many ways. Apart from this interdependency, there is also close co-operation between the three programme areas mentioned and two other areas, that is Research and Evaluation, and Training and Dissemination.

The concerns of the Research and Evaluation component of the CDC reflect the basic concerns of the curriculum project areas. Once needs or issues are identified, the personnel in this programme area go about the task of data collection, data processing, analysis and hence over-all evaluation of the particular issue. Research-based data is important and necessary in the planning of a curriculum, in making recommendations for revision of a curriculum, in constructing specific remedial measures. One research project recently begun is the diagnosis of primary school pupils' reading problems, the results of which will undeniably present significant implications for consideration in other project areas, like the Integrated Curriculum, and the Compensatory Education and Language Projects.

In any new or on-going programme, there is always the need for exposure sessions, re-orientation courses, resource and supportive materials and up-to-date information, as well as opportunities and facilities for interaction between teachers themselves and between teachers and CDC personnel. The functions of the Training and Dissemination area are centred around the aspects mentioned above, and the programmes are arranged so as to operate closely with the programmes of the other curriculum areas.

In view of the fact that the Language, Primary and Secondary Curriculum areas also deal with training, dissemination, research and evaluation in their individual programmes, we should note that the Training and Dissemination and Research and Evaluation programme areas also provide the advice, training, expertise and resources required of them by the other three programme areas.

The various projects undertaken by the different programme areas may be classified broadly into the following categories, based on the stage of curriculum development that the project deals with:

- Experimental

An example is the Integrated Curriculum Project which is experimenting on the likelihood and feasibility of integrating the various subjects in the primary curriculum into some common themes. This involves, among other things, writing materials, trying them out, assessing them and rewriting them.

- Implementation

An example of a project having reached this stage is the new history curriculum project for primary and lower secondary schools. The major concern of the project at the moment is the reorientation of teachers through in-service courses and the writing of teachers' guides.

- Review or revision

The Secondary (Modern) Mathematics curriculum which has reached its tenth year of implementation is an example of this category. The whole programme is examined in detail - data collected over the years re-examined, the whole curriculum content re-assessed, teachers' views on accumulated experiences sought, remedial measures structured formally and new needs and new directions seriously considered.

Curriculum development is not only a time-consuming process, but is also labour-intensive and financially demanding. Some of the experimental curriculum projects in the Centre are in their fourth or fifth year of experimentation, but still nowhere near completion as there are so many issues as well as modifications still to be examined. Even projects that have been implemented need to be closely monitored. All these professional considerations require quantitative and qualitative manpower inputs. Thus staff numbers at the Centre, both professional and support,

have increased from 73 in the first year of operation (1973) to over 270 in the seventh year (1979). The increase in personnel and scale of curriculum activities has meant an increase in annual expenditure - from \$86,601.000 Malaysian in 1973 to \$3,623,800.00 in 1979. Although the manpower needs of the Centre have more or less been fulfilled and stabilized, it is anticipated that its financial needs will continue to increase with the increase in spread and depth of activities.

Issues

Translation of national goals into curricular specifications.

Since Independence Malaysia has introduced various innovations in the attempt to meet the needs of the country. The translation of the national goals and objectives, i.e. the development of a united, democratic, just, liberal and progressive society into classroom practice, poses formidable challenges to the CDC. Among these many challenges is the development of a curriculum which would reflect and hopefully establish unity within diversity, a common curriculum acceptable to all, which will orientate the children to a Malaysian outlook and inculcate in them a sense of national consciousness and unity, which at the same time preserves and sustains the growth of the language and cultures of the different communities.

Common content is necessary to ensure that certain desired elements are incorporated into the curriculum for all schools; at the same time the curriculum must be able to relate and respond to the needs of the child's environment and community. The geography syllabus currently being formulated attempts to achieve this. For Standards 4 and 5 in particular, the basic knowledge, skills and attitudes pertaining to the study of geography will be common to all pupils, but the application of such knowledge and skills should relate to the child's immediate locality, district and state. The Moral Education Project, in its attempt to formulate a syllabus for all schools in the country, has to ensure that the values to be inculcated in the pupils are acceptable to all communities. Hence these values will be derived from the religions, traditions and values of the multi-racial Malaysian society as well as from universal moral values that accord with the principles of the RUKUNEGARA. The Pahang Tenggara Experimental Curriculum Project attempts to design a curriculum that would respond to the needs of a gigantic land development scheme, a region of nearly 2.5 million acres which should develop from an agro-based community into a regional urbanized and industrialized community within 20 years.

These are a few examples of attempts to design curricular programmes to meet the regional and community needs. Another concern for the CDC today is in equalizing opportunities between areas, between groups and between individuals. In principle, the common content, common approach and common emphasis employed since 1957 in curriculum organization constitute an attempt to achieve national unity and provide equal opportunity for all. However in practice, various factors need to be considered. There are differences between schools, for instance in the amount of physical facilities or the number of trained teachers each school has. There are also individual differences among pupils: those from the lower socioeconomic groups are often ill-equipped to meet

the challenges of formal schooling. The Compensatory Education Project, now at its experimental stage, attempts to identify the needs and problems of the culturally disadvantaged child and to formulate strategies to overcome these problems. The aim of the Project is to set up programmes to reduce the effects of cultural deprivation as early as possible.

Equality of opportunity, whether in the sense of equality of access to worthwhile knowledge and experiences, or in the sense of equality in the level of achievement, is a concern that has come to the fore. Now that quantitative improvement is no longer an urgent issue, it is possible to concentrate on the needs of the individual child. The new emphasis on remedial teaching is an effort towards this end.

While educational programmes may aim for ideals such as unity and equity, they also have to keep up with the times. In order for a child's education to be meaningful, the learning that he receives should not only equip him to understand the past and cope with the present; it should also help him in his onward journey into the future. This projection into the future and the need to strike a balance between what is needed now and what may be required years later are pressing issues that curriculum developers cannot choose to ignore. What are the kinds of changes likely to occur within the next decade or so? How are we to prepare the present generation of pupils in order to avoid making them 'walking encyclopaedias' of outdated information and to lessen for them the effect of 'future shocks' later on? With the world changing at an almost alarming rate, such questions become more and more urgent.

In the attempt to achieve the aim of developing a progressive society oriented to modern science and technology, rapid changes from the traditional to the modern way of life are involved. Modern living, associated with urbanization and industrialization, will no doubt create new values and ideals, new freedom and constraints. All this means that the curriculum will have to inculcate certain values in the young people to enable them to cope with the complexities of modern living. The CDC therefore has to anticipate the values that may be relevant in the future as well as decide which of the traditional values to retain and strengthen. The Moral Education Project, more than any other project, has to grapple with this issue. The emphasis on science and technology as well as material achievement, for instance, if not put in the proper perspective, could lead to the erosion of some tested traditional values such as love and respect for elders.

Malaysia, like many other countries throughout the world, has, as a result of developments in science and technology, undergone rapid changes in economic and political affairs as well as in demographic and social structures. Such rapid changes are likely to continue in the future, hence the need for the curriculum to keep pace with these changes. There is for instance the pressure now to include topics such as drug abuse, road safety, consumer education and environmental education in the school curriculum. With the prevailing criticism of 'overloaded' syllabi, there is a need for reviewing the entire curriculum.

Teacher and community attitudes

In any curriculum change probably the most significant factor in its success or failure is the teacher: his willingness, time, ability, energy and above all his commitment. In Malaysia today there is a wide range of teacher competences due to varied academic and professional training, experience and attitudes. For the implementation of any curricular programme it is necessary to give some orientation and training for the teachers, in accordance with their needs and competences. However, in a centralized system where every programme has to be implemented throughout the country, usually at the same time and under constraints of funds, personnel and time, it is not always easy to reach the ideal. But more important than retraining is the attitude of the teacher towards his role and function of getting children to pass examinations. Such attitudes have arisen from the extraordinary importance given to examinations, where certificates are necessary in the scramble for modern sector jobs. Hence the non-examinable areas tend to be neglected, inculcation of values and attitudes tend to be considered less important, outdoor activities and practical work are often ignored and inquiry-discovery problem-solving methods considered impractical and a waste of time. Hence the lack of total success of new curriculum programmes which place so much emphasis on attitude formation, development of inquiring and critical minds and greater participation of pupils in the classroom.

The extraordinary importance given to examinations by teachers is further reinforced by the prevalence of a similar attitude on the part of the community. While expecting the school to prepare pupils for examinations, the community at large also expects it to do more. Discipline, road safety and consumer education, for instance are considered the responsibility of the school. While it is justifiable on the part of the community to expect the school to equip children for living, it is unreasonable to expect the school to do it alone, without the contribution, support and reinforcement from the community.

Dissemination and implementation

In the centralized Malaysian system effective dissemination and implementation are a major concern. Any curricular programme meant for implementation has to convey the common content, common approach and common emphasis. At the same time it has to make provision for diversity; to meet the needs of the environment, the needs of the community and the needs of the individual child, as well as to be workable under differing physical facilities and teacher competence of each school. The interpretation of the common programme to suit diversity of conditions and the translation of the programme into effective and meaningful classroom practice lies with the teacher. It is in these two processes, the interpretation and the translation of the common programme, that much support and guidance is required by a large number of teachers. In addition, the monitoring and quality control of the curriculum as it operates in classrooms throughout the country has to be undertaken. Further strengthening of the infrastructure to undertake these activities is being considered.

Proposals

From the context, issues, and problems of curriculum development discussed above it is not difficult to see what needs to be done. Currently various issues are being discussed and proposals made. Of these, wider participation in the curriculum development process,

the need for diversity within the common curriculum and the infrastructure for more effective dissemination and implementation merit further mention.

Wider participation in all stages of the curriculum development process is necessary to ensure that the needs of the different geographical regions, the different communities, the wide range of ability of pupils and the differences in the resources of schools are being considered. A number of strategies have been tried in order to achieve this aim. The Secondary Mathematics Project, in its attempt to revise the mathematics syllabus has requested a randomly selected sample of mathematics teachers throughout the country to express their views on the current syllabus and to make proposals for a new one. The Moral Education Project has obtained its list of values for incorporation into the syllabus from all the thirteen State level curriculum committees. The Geography Project held workshops with teachers in the different states in writing teacher's guides for the Standard 4 syllabus.

The move towards decentralization is obvious but it is anticipated that the adoption of a totally school-based curriculum development strategy is not likely, nor is it desirable. A certain degree of centralization is necessary to ensure that the desired common elements prevail in the curriculum of all schools in the country and that the provision of equality of opportunity can be enforced, but equally important is the maximum utilization of the limited resources of the country.

Wider participation in the curriculum development process would, it is hoped, increase commitment, a prerequisite to the effective implementation of any programme. A further step in the attempt to decentralize and to ensure effective implementation is a proposal for the establishment of educational resource centres. Already four pilot centres in four States have been approved.

Such centres have been conceived as professional resource centres for all kinds of professional activities from decentralized curriculum development and in-service training right down to special advisory and loan services. For example, they would make available technological services and facilities required by teachers to improve their daily classroom activities. They would also provide the opportunity for teachers to come together to find solutions to their common problems. Through such interaction greater utilization of local resources is anticipated.

In addition to the setting up of these educational resource centres, there is also the proposal to formalize the establishment of 'Key Personnel' for different subject areas at all levels in the school system throughout the country. Such personnel would be charged with the duty of disseminating the necessary information and requirements of new curricular programmes, as well as guiding and helping teachers to implement programmes in the classroom. In line with this is the proposal to increase the number of professional staff at the State level. These officers would co-ordinate the work of key personnel in addition to initiating State-level curriculum development work.

The school curriculum is the essence of the educational enterprise and in Malaysia it is regarded as a major instrument in the development of a united, democratic, just, liberal and progressive society. In view of this it is essential that such national goals be translated properly into curricular specifications and that efforts be made to ensure that what is intended by the curriculum is actually happening in the classroom. Malaysia may still have a long way to go but we are confident that we have explored various alternatives and are heading in the right direction.

NEPAL

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Background

Stretching astride the great Himalayan Range between India and the Tibetan region of China is the little country of Nepal. Extending north-west to south-east for about 848 kilometres with an average width of roughly 160 kilometres, this landlocked nation encompasses over 14,398 square kilometres. The estimated 1978 population is 13.4 million with an average growth rate of 2.1%. The average density of population is 79.5 per square kilometre, the minimum being 30 per square kilometre in the extreme north, and the maximum 2,500 per square kilometre in the capital city of Kathmandu.

Nepal is predominantly an agricultural country. About 95% of the economically active population is engaged in agriculture, so the importance of other economic activities is at present extremely small, with only about 2% of the active population engaged in manufacturing and other related industries.

Literacy is extremely low, and this is particularly so with the womenfolk. The rate of literacy has increased from 8.92% in 1961 to 14.32% in 1971 and was estimated at 22.38% in 1978. In these figures, the proportion of female literacy has remained almost constant at about 5%. Almost 78% of the population have never gone to school, and only about 12% have completed a primary education of three years.

Although there are no statistics available on national accounts, it has been estimated that the average national income per person including cash and produce is about RS. 1020 (less than \$US90) per year.

The antecedents of education in Nepal date back many centuries to an indigenous system of training. The classical Sanskrit system dominated the educational scene. In recent times, when modern educational systems were developing in western countries, time stood still in Nepal. The first English high school was established in 1859, to be followed by the establishment of about 150 primary schools in 1901, culminating in the opening of the first English college in 1918. Despite this restricted policy on the spread of education, when the autocratic Rana rulers were overthrown in 1951, there were 321 primary schools, 11 high schools, one technical school, a college and a primary teacher training centre. Within a decade of democratic rule, the number of schools and colleges increased to 4,001 primary schools, 156 secondary schools, 33 colleges and a college of education with about 5 normal schools. The next decade brought even more development with 7,256 primary schools, 430 high schools, 48 colleges, one college of education, 7 normal schools and a national university. School statistics for the 1978 school year are: 9,404 primary schools, 2,639 junior secondary schools, 552 secondary schools and one university comprising 67 campuses.

All through this long period of twenty years of educational growth and development, we were merely concerned with quenching the educational thirst felt by the people. Quantitatively we grew, but qualitatively we suffered. The people needed schools, and the State provided them without even considering the fundamental aspects of education: what is to be taught, why is it to be taught, how is it to be taught and where is it to be taught? The content of education, borrowed and adopted from the colonial schools of the British Empire, mainly from India, was rigid and stereotyped. The educational programmes were criticized as being inadequate and outmoded and thus not properly geared to meet the needs of modern times. The content of education, embodied in the curriculum, was considered rather too scholastic, often unrelated to life, overburdened and therefore failing to meet the demands of Nepalese society, in its process of rapid change and transformation.

National goals

Reflecting upon the drawbacks and weaknesses of the traditional system of education, the National Education System Plan was formulated in 1970. This plan was the culmination of a process of educational reform started as early as 1952, when a comprehensive National Education Plan was conceived and implementation, by parts was attempted. The plan was primarily aimed at counteracting the elitist bias of the inherited system of education, by linking it more efficiently to productive enterprises on egalitarian principles. It called for unifying different systems of education, e.g., the Sanskrit, the Basic and the English, into one productive system that served the country's needs and aspirations.

The plan seeks to regard education as an investment in human resources for the development of the country, and sets out well-defined educational aims for different levels of schooling in relation to the goals of national development.

The aims and objectives of the National Education Plan are:

- Producing citizens who are loyal to the nation, the Crown and national independence and who remain alert and ever active, concerning their rights and duties;
- Developing, preserving and extending such learning areas as science, technology and skills development, which are necessary for the development of the country and for producing a cadre of skilful workers and technicians to shoulder responsibilities in every area of national development;
- Inculcating qualities such as moral integrity, dignity of work, self-reliance, aesthetic awareness and cosmopolitanism; and finally
- Preserving and developing the national language, literature, arts and culture.

Institutional profile

Since the inception of the National Education System Plan, curriculum development has drawn considerable attention from educational planners, administrators, teachers and intellectuals alike. There was a time when the word 'curriculum' was almost alien even to high-level Nepalese

educators. Instead, courses of studies or syllabi were prevalent. Courses once prepared by the Ministry of Education remained constant for at least a decade, if not for a quarter of a century, but now the trend has changed considerably. Curriculum making is considered a continuous process. Also there seems to be a growing urge to link curriculum to national ideology as well as to the needs and aspirations of the nation's people.

In consideration of the factors shown above and to meet the pace of development in the area of education, the need was felt for an agency that would work solely towards developing, implementing and evaluating the curriculum, and would create an in-built process of accreditation and improvement within the total structure of educational administration. So the Curriculum Development Centre was established under the active guidance of the Ministry of Education. The Centre has the technical responsibility of designing, drafting, developing, improving and revising curricula in all subject areas and at all levels of school education.

The Centre's purposes and functions are:

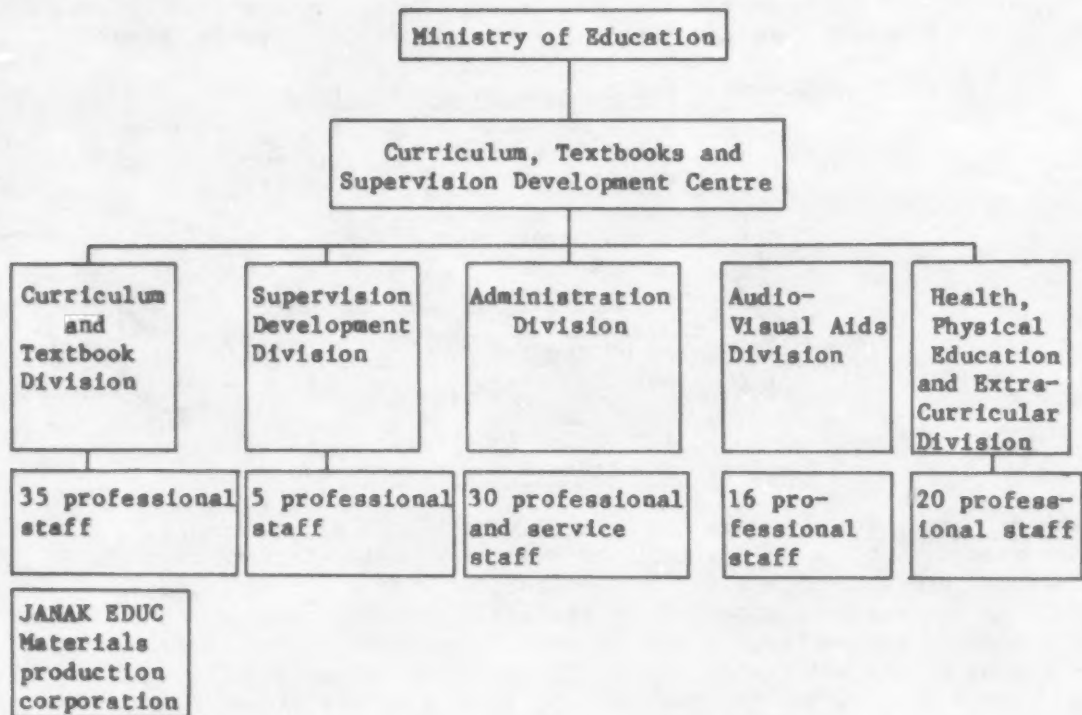
- To translate national goals of education, as laid down in the National Education Plan, into curriculum objectives and programmes;
- To plan and develop curriculum in various subject areas, specified in the plan, so as to meet the objectives of each level of school education;
- To prepare guides to the curriculum developed in various subject areas;
- To carry out continuous research to examine the effectiveness of the curriculum and suggest required modifications;
- To organize curriculum orientation programmes for teachers, headmasters and supervisors in various districts and regions of the country;
- To try out new ideas, methods and techniques in different subject areas, with a view to bringing both innovation and improvement into the teaching-learning situation.

Curriculum has been defined as a programme of studies designed to achieve the aims of education as conceived in the new Education System Plan. Guiding principles for curriculum designers have been given as follows:

- At the primary level, the emphasis will be on teaching rudimentary skills in reading, writing and arithmetic along with some instruction in an occupation connected with the realities of life, especially an elementary knowledge of agriculture;
- The lower secondary level will emphasize character building by cultivating loyalty to the Crown and the country and developing a sense of the dignity of labour through meaningful work experience;
- The aim of the secondary level of education will be to create useful citizens by laying special stress on vocational skills along with general education.

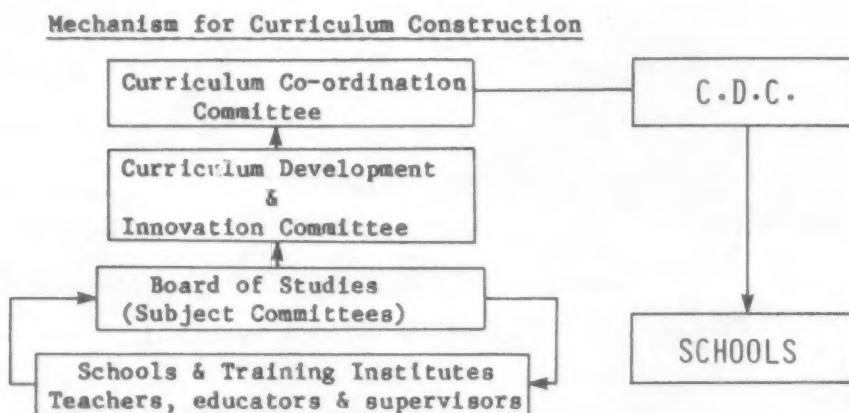
The CDC's budget for 1979-80 was RS148,000, (about \$US1,213,331).

Organizational Structure



Processes

In accordance with its guidelines, the Centre plans and develops courses of studies and curricula at the national level, through a Committee system. The committees are organized vertically in a three-tier system, thus:



Subject Committees are composed primarily of teachers, professors, supervisors, subject specialists and sometimes administrators in the concerned area. They are constituted subject-wise and are responsible for planning and developing courses of studies. The draft course plan prepared by the subject committee is sent to schools selected on the basis of geographical representation, for their reactions and suggestions. Often it is exposed to various teachers' workshops and seminars organized for the purpose, in different parts of the country. After collecting the suggestions and analysing the remarks received from the above-mentioned sources, the subject committees prepare the final draft curriculum for the consideration of the Curriculum Development and Innovation Committee. Presently there are about fifteen subject committees comprising some 200 members.

Curriculum Development and Innovation Committee: this committee consisting of specialists in different subject areas, teachers, educators and some educational administrators, looks after the general framework of the curriculum and analyses the format and style of individual course-plans in relation to other courses, so as to guard against duplication with other subject areas. After due deliberation and consideration, the curriculum package, with or without modifications, is forwarded to the Curriculum Co-ordination Committee for final approval.

Curriculum Co-ordination Committee: this committee, under the chairmanship of the Assistant Minister of Education, has been formed at the highest level with representatives from concerned departments and institutions e.g. educational administrators, university professors, subject specialists, headmasters, the Dean of Education and other educationists. This committee establishes general principles for the framework of education, and builds up

policy for curriculum planning, development and improvement. It also lays down the standard for different stages of school-level education, and co-ordinates the school curriculum with higher education curricula. Curricular decisions taken by this committee and approved by His Majesty's Government are then sent to the Curriculum Development Centre for implementation.

The implementation phase of the new curriculum has become the most crucial part of the whole process, especially in a situation like ours, where we have adopted a centrally directed curriculum, to be applied in all parts of the country. So it has become a most challenging task, to be carried out on a national scale. It has involved most of the teachers, teacher educators, supervisors, educational administrators and local school managers. It has also required certain other resources, such as improved textbooks, teaching units and teacher's guides, teaching-aid materials, equipment and trained teachers. There have also been other problems - physical, psychological and developmental.

During the initial stages of introducing the new curriculum to the school system, the Centre organized orientation training sessions and workshops, on salient features of the curriculum innovations, for teachers and supervisors at the regional level. The supervisors and resource teachers, in collaboration with the subject specialists from the Centre and thus the teachers, were oriented for curriculum implementation and innovation.

During the later part of the implementation of the National Education Plan, when the process of planning and development of the new curriculum was completed, and textbooks written had accordingly been adopted, teachers, parents and even educators felt that there was a need for standarization of the newly adopted curriculum content. They have been complaining that there are wide variations and divergencies both in content and standard, from level to level and from subject to subject. Similar ideas have been expressed in follow-up studies, teacher workshops and supervisory seminars.

Most of the curriculum revision and improvement attempted so far has been on an ad hoc basis, usually through committees organized for the purpose. A few omissions here and a few additions elsewhere used to be the guiding principle for revisions. Educators still believe that knowledge has its own virtue, and usually design, develop and modify the curriculum so that information in different disciplines is compartmentalized in a philosophical way. The knowledge explosion has now proved a big problem for these people in the selection and rejection of pieces of information, and this has led to the development of vast courses of study rather too heavy for young learners. Our educators still cannot accept the idea that modern education should leave a major part of knowledge for self-learning through interaction with the environment.

With all these shortcomings and weaknesses creeping into the making of the new curriculum, the Centre felt the immediate need for curriculum change; analysis, modification and improvement of the whole approach through co-operative processes and action-type research based on the principles of child growth and development, on realities of rural life and on the availability of trained teachers on a national scale.

The process of curriculum improvement should be made a co-operative enterprise. Its success is proportionate to the degree of whole-hearted participation of teachers, supervisors and administrators. In consideration

of this fact, teachers were given opportunities to express their thoughts and feelings individually or in groups through interviews, meetings, conferences, seminars and workshops. During development, the curriculum expert's knowledge and opinion were given priority, but in the process of improving the curriculum, the teachers' experience and their thoughts were given emphasis.

From the very beginning of the implementation stage of the new curriculum, improvements were made on the basis of experiment and action type research so that the whole process of improvement could be worked out as a well co-ordinated programme. This included a careful and thorough study of the child and of learning processes, an analysis of the needs of the community and a survey of growing trends towards a broader social order.

Issues

Even a well-designed and carefully planned curriculum, if it is irrelevant to the local conditions and realities of life, has a poor chance of adequate implementation. This is the case with which we have been faced. Although curriculum implementation is greatly simplified because of the existing conceptions which generally equate curriculum with the teaching of subjects according to the texts, we have not yet been able to meet even these minimum requirements.

The major factors that affected the implementation of the curriculum were:

Scarcity of specialists

The Centre has a few specialists with rather insufficient training background to manage all its activities; designing, developing, implementing and assessing the curriculum.

Lack of trained teachers

In any process of educational reform and change, the teacher assumes a major role in transforming and even more in implementing the newly devised curriculum. Unless the teacher is convinced, he becomes dull, and the curriculum remains merely a bundle of papers containing high-sounding words and a congregation of idle concepts.

The idea of teacher training is relatively new in the history of Nepalese education. The first Teacher Training Centre was not started till 1950, the maximum annual output being around 500 graduates per annum. After the introduction of the new Education Plan in 1971, when the training certificate was made compulsory for teaching positions, the teacher training programme suddenly gained great momentum. Even with this big leap in teacher education, three out of every five are still untrained, and the picture does not seem to be very bright for the coming decade, because of the high rate of turnover and the large number of schools being established every year.

These problems and others have made it very difficult to implement the new curriculum effectively and with the spirit in which the curriculum was planned. Several orientation programmes and workshop training sessions were organized and conducted from time to time. In this way, the magnitude of the problems has been reduced but has not been eliminated completely.

Lack of standard textbooks and related instructional materials

From the period when the English system of education was adopted in Nepal, till recently, textbooks written and produced in neighbouring countries have influenced and guided courses of studies at all levels of education. It is therefore natural that the objectives and principles of the curriculum were determined solely by the textbooks available on the market. After the implementation of the new Education Plan, this practice was terminated in phases, and an attempt was made to produce books based solely on the national curriculum, and written by a panel of specialists or by individual writers selected for the purpose. This was a radical change in both spirit and content of education, for which the average teacher was not prepared. As a result, the real meaning of the curriculum is not understood and applied by most teachers, whether trained or untrained, and the old practice of the textbook constituting the curriculum is prevalent in the school system. Even now, textbook and curriculum are considered synonymous.

Assessment

Rigidity of the examinations in the traditional system of education has been a great hindrance to the modernization of curriculum. It has discouraged freedom of experimentation and adoption of innovative practices in the teaching-learning situation for which the teacher's creativity is absolutely essential. And this can be ensured only if the examination system is liberalized.

When framing curriculum based on the aims and objectives prescribed for the new education, it was felt that it was very urgent that the traditional system of examinations be replaced by a technique of assessment and evaluation. Internal assessment and evaluation have been made an essential feature of reformed testing procedures and are considered a continuous process. It was felt that the end-of-year examination alone was not enough to test the whole personality of the pupil, and so has now been made only a part of the teaching-learning process. Moreover, it is not only the scholastic abilities of the child but also the non-scholastic traits and skills that are to be tested and assessed through continuous evaluation. Objective-based short-answer tests have been prescribed in place of long subjective-type questions.

Equipment and instructional materials

The situation was even worse with equipment, teaching aids and educational materials. Practical classes were almost unknown in the school situation and even practical courses were dealt with solely through theoretical discourses. Now conditions are improving, as the State is coming forward with minimum sets of equipment and instructional materials in the areas of science and vocational education and in subjects related to work experience. Even so, some schools still follow the same old pattern of theoretical teaching, either because of insufficiency of teaching-aid materials, or because they do not know how to make proper use of commercially prepared educational materials.

Transport and communication

Nepal's transport and communication system is still in an embryonic stage. Because of the inaccessible rugged terrain and consequent lack of roads, railways and other modes of transportation in most parts of the country, goods are usually carried on the backs of men and women. This sort of transport by porters and sometimes by mules and sheep, is very costly. It takes sometimes days and even months to deliver things to their destination. This has caused insurmountable problems and difficulties in supplying textbooks, curriculum and other related instructional materials, to schools located in far off places. In some cases things have to change hands in several places before they reach their destination, often damaged or completely destroyed.

PAKISTAN

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National goals

Whereas it is necessary to provide for the building up of national cohesion by promoting social and cultural harmony, and designing curricula relevant to the nation's changing social and economic needs, compatible with the basic national ideology and providing a massive shift from general education to more purposeful agro-technical education; and to make provision for Federal supervision of curricula, textbooks for various classes and maintenance of standards of education;

It is hereby enacted...

This preamble to the Federal Supervision of Curricula, Textbooks and Maintenance of Standards of Education Act, 1976, states the main purpose of education in Pakistan; namely, to promote the well-being of Pakistan as a strong unified nation. The achievement of this goal of national unity is based on Islamic ideology and economic growth through the development of agriculture and technology.

The aims of education reflect both the national goals and the concept of education as a means of promoting individual personal development. They are guide posts which provide purpose and direction to the educational system. Obviously they should be consistent with our faith, national ideology and aspirations. Since aims have to provide a clearcut framework, they need to be selected boldly and with clarity of thought in order to provide a sound and meaningful base for the national educational effort. Consequently, the Government decided to adopt the following aims of education for the nation:

- To foster in the hearts and minds of the people of Pakistan in general, and the students in particular, a deep and abiding loyalty to Islam and Pakistan and a living consciousness of their spiritual and ideological identity; thereby strengthening the unity of outlook of the people of Pakistan on the basis of justice and fair play;

- To create awareness in every student that he, as a member of the Pakistani nation, is also a part of the universal Muslim Ummah, and that it is expected of fellow Muslims inhabiting the globe on the one hand, and to help spread the message of Islam throughout the world on the other;
- To produce citizens who are fully conversant with the Pakistan Movement, its ideological foundations, history and culture so that they feel proud of their heritage and display firm faith in the future of the country as an Islamic State;
- To develop and inculcate in accordance with the Quran and Sunnah, the character, conduct, and motivation expected of a true Muslim;
- To provide and ensure equal educational opportunities to all citizens of Pakistan, and to provide minorities with adequate facilities for their cultural and religious development, enabling them to participate effectively in over-all national effort;
- To impart quality education and to develop fully according to their capacity, each individual's potentials, through training and re-training and to develop the creative and innovative faculties of the people with a view to building their capabilities effectively to manage social, natural and productive forces, consistent with the value system of Islam;
- To provide a minimum acceptable level of functional literacy and fundamental education to all citizens of the country, particularly the young, irrespective of their faith, caste or creed, in order to enable them to participate productively in the total national effort;
- To create interest and love for learning and discipline among the youth and to ensure that every student is imbued with the realization that education is a continuous and life-long process;
- To promote and strengthen scientific, vocational and technological education, training and research in the country and to use the knowledge for socio-economic growth and development, thereby ensuring a self-reliant and secure future for the nation.

The strategies for the implementation of these aims gave a high priority to the revision of curricula with a view to re-organizing the entire content around Islamic thought and giving education an ideological orientation so that Islamic ideology permeates the thinking of the younger generation and helps them to refashion society, with the necessary conviction and ability, according to Islamic tenets.

Other strategies included the integration of the traditional 'Madrasah and Darul Uloom' in a modern 'schools, college and university' system of education, the use of the national language as a medium of instruction, the effective participation of local communities in the development and maintenance of education facilities, and the promotion of universal functional literacy through mobilization of community resources.

Structure of education

Primary education (Grades I-V) is concerned with providing an education which develops all aspects of a child's personality and equips students according to their abilities and aptitudes, with the basic knowledge and skills they will require as individuals and as citizens. At the first stage in education, primary schooling is also expected to provide a foundation which will permit students to follow further education with profit.

The middle stage of schooling (Grades VI-VIII) is considered part of secondary education and some diversification takes place from Grade VI onwards. At the end of Grade VIII, there is a greater variety of courses available, some of them vocationally oriented. The curriculum at this stage consists of a compulsory core and electives. The higher secondary stages (Grades XI and XII) are considered to be a preparatory stage for university education.

Responsibility for curriculum development

Schooling in Pakistan is generally a responsibility of the governments of the provinces through their Departments of Education. Each Province has a provincial bureau (or centre) of curricula which is an associated centre of the National Curriculum Bureau. The pattern of organization of the curriculum bureaux varies from province to province, as the bureaux have to work with the existing provincial organizations such as the local Directorates of Education, Textbook Boards and Boards of Secondary Education. This diversity not only gives variety to various functions, problems and issues, but also gives curriculum specialists a chance to study the strengths and weaknesses of different organizational designs. From this study, it is hoped that a new and more effective pattern of organization will evolve at both the federal and provincial levels.

The National Bureau of Curriculum and Textbooks (NBCT)

Before the early 1970s, curriculum development was not visualized as a distinct, separate and specialized function, but was a part of many other functions of institutions in the education departments including the Provincial Directorates of Education, the Boards of Education, the Education Extension Centres and at a later stage the Textbook Boards.

All curricular work was done through committees which were created for a specific purpose at a specific time and were dissolved as soon as the task was over. No permanent committee network was set up to co-ordinate, advise on and evaluate curriculum development and implementation. Almost all efforts in curriculum change were made by groups of dedicated and forward-looking people.

It is a phenomenon in developing countries that the need for institutional arrangement for new tasks or ventures is felt after the job has been initiated by an individual or a group, and the Government Agencies have seen the task in action. It is normally as a result of such bold ventures on the part of certain individuals that the justification for an institutional arrangement is recognized.

In Pakistan, after major exercises in curriculum change had been completed and the benefits seen, the need for creating a National Bureau of Curriculum and Textbooks at the Federal level, and similar organizations at the provincial level was felt, and the National Bureau of Curriculum and Textbooks was established in 1967.

Functions

The hard core of policy in relation to curriculum and textbooks is aimed at the qualitative improvement of education. Curriculum development is seen as the hub of the educational process and the nature and quality of education is largely determined by the curriculum content.

The National Bureau has responsibility for the revision of all curricula and textbooks to ensure their relevance and adequacy. The revision was seen to be necessary to ensure that:

- Islamic ideology was protected;
- Modern knowledge in science and mathematics was included;
- The curriculum was diversified so as to produce skilled manpower for different vocations and technologies;
- Textbooks were error-free and of high quality;
- High academic standards were maintained;
- Integrated curriculum and textbooks were introduced to avoid overloading and overlapping.

This task of curriculum and textbook revision, started in the early seventies, is the main function of the NBCT.

The Bureau has both a leadership role and a co-ordinating role. It is empowered to provide leadership in curriculum and textbook development in general, and to take the initiative and play an active role in provinces where resources are not yet developed. At the national level, the Bureau assists and advises the Government in the formulation and implementation of national policies with respect to curriculum development and evaluation and textbook production.

Other functions include:

- Co-ordination of curriculum and textbook development activities and projects in the provincial bureaux and boards;
- Conduct of research in curriculum development on different aspects of curriculum renovation for classes I-XII and publication of curriculum bulletins and handbooks;
- Collection of information and data regarding curriculum development and textbook production in other countries and, after assessing the development in the light of curriculum research, dissemination to the provincial agencies concerned;

- Provision of guidance and resource material to Textbook Boards and authors in the production of textbooks, workbooks, primers and readers; evaluation of textbooks for all levels against national goals, aims and objectives;
- Advice on curricula and materials for special educational needs and community development projects;
- Liaison with educational institutions and authorities in Pakistan and with international agencies, such as Unesco, IBE, UNICEF, the ILO and with curriculum development organizations in foreign countries.

Resources

The National Bureau has a staff of 45 professionals assisted by about 90 managerial and clerical staff. In addition there are varying numbers of overseas and national advisers and experts to assist in the professional area. The work of the Bureau is divided into four sections, each headed by a senior officer, responsible for, respectively:

- Agro-technical and vocational curriculum;
- Teacher education and instructional technology;
- Elementary, secondary and higher secondary curriculum;
- Textbooks, documentation and examinations.

Funds are provided by the Federal Government. The total budget for the fiscal years 1976-81 amounts to RS16.1 million (approximately \$US16.4 million).

Relations with other organizations

Apart from curriculum bureaux, there are other agencies concerned with the development of education which take an active part in the development and implementation of curriculum at the provincial levels. These agencies are provincial Education Departments, Textbook Boards, Education Extension Services Centres, Boards of Intermediate and Secondary and Technical Education, Associations of Teachers, Associations of Educational Administrators and Commissions and Committees on Examinations, Textbooks, etc. They collaborate with each other in planning and executing curriculum development. Their active participation and involvement is encouraged and ensured by the Curriculum Bureaux and Centres at the provincial and federal levels. Keeping in view the local conditions in terms of availability of trained manpower, the potential of various concerned institutions, and the extreme urgency of the task to be handled, the National Bureau of Curriculum and Textbooks has evolved a fabric and network of committees to enlist the participation of all the related agencies and persons actively engaged in the development and implementation of curricula.

The committees are formed by obtaining nominations of suitable persons from the Boards of Secondary Education, the Provincial Education Departments, the Textbook Boards and other research organizations.

These arrangements ensure the involvement in the process of curriculum development of experts such as subject specialists, pedagogical experts, teachers, curriculum specialists and administrators.

All the projects of the National Bureau of Curriculum and Textbooks or its associated centres are identified jointly by the National Bureau of Curriculum and Textbooks and the provincial bureaux. In the initial stages, the provincial bureaux do the spade work under the supervision and guidance of NBCT. If necessary, resources in terms of necessary expertise, advice and financial support are provided by the National Bureau.

In some cases the projects are divided between the provincial bureaux and the National Bureau through mutual agreement. In certain other cases, initial work on various projects is allocated to different concerned agencies such as the Boards of Education or Institutes of Education and Research, either independently by the provincial bureaux or by the NBCT.

Style of curriculum development

The style of curriculum development is objectives-oriented and based on the national goals and aims of education. In addition, the mode of operation of the Bureau rests on two major premises:

- The need to ensure the active participation of all cross-sections of the population engaged in this work;
- The need for a systematic approach to curriculum development with administrative mechanisms to cope with all stages of the work, from the initiation of research projects to the composition of committees.

Stages in curriculum development

To start with, broad-based committees consisting of eminent educationists, subject experts, teachers and administrators, are formed to determine and delineate the goals and aims of education, in terms of national policies. The committees meet in several sessions, and prepare a draft of the goals and aims of education.

The goals are defined into specific objectives for each level of education from Class I to Class XII, classifying them into a 4 x 3 matrix, comprising the following categories at various stages of the educational ladder:

	Cognitive	Affective	Psychomotor
a. Individual			
b. Social			
c. Cultural			
d. International			

This draft report on the goals and aims of education is then circulated for comments, to the Provincial Education Departments, the Curriculum Centres, the Boards of Education, teachers, administrators and Institutes of Education and Research. On the basis of these comments, the National Committees again scrutinize the draft and prepare a revised draft of aims and goals.

On the basis of the goals and aims of education, a broad-based steering committee for elementary education and secondary education consisting of educationists, curriculum specialists, subject experts, teachers and administrators, are formed to propose schemes of studies. The draft schemes of studies are circulated for comments again in the same way as the draft of the goals and aims of education and finalized in the light of comments received.

The schemes of studies form the skeleton around which the curricula for primary and secondary schools is to be based and developed in respect of various subjects, the relative weighting and importance of which had been defined in the scheme of studies.

The Institutes of Education and Research and various other specialized research agencies are associated to collaborate on various research projects.

Simultaneously, while these research studies are being undertaken, Provincial Curriculum Committees in various subjects are constituted in order to develop draft curricula. The four Curriculum Centres in the provinces submit their curriculum reports on various subjects to the National Bureau of Curriculum and Textbooks. The NBCT then forms National Committees in various subjects, with broad-based composition which includes all cross-sections of the population participating in curriculum development and implementation, on the basis of nominations from various concerned agencies mentioned earlier.

The methods of finalization of the subject reports is similar to that of the development and finalization of the scheme of studies, that is, the draft reports in individual subjects are circulated all over the country for comment by the NBCT, and are finalized at subsequent meetings of the National Committee on that subject.

Before finalization, the draft reports are subjected to micro-testing. Micro-testing is an innovation in Pakistan. Different learning experiences in the curriculum for various subjects are selected in terms of the objectives of the learning packages, which, of course are clearly classified in cognitive, affective and motor-sensory terms. Teachers from various schools teaching that subject at that stage are trained in terms of teaching-learning strategies and provide with necessary instructional aids according to the curricula. These teachers go to various schools selected on the basis of random sampling in urban and rural areas, teach these lessons and measure the extent to which the objectives are achieved. On the basis of micro-testing the curriculum reports are revised and finalized.

The curriculum reports generally include in measurable terms the objectives of teaching certain subjects, the course content, the methodology for facilitating learning, the system of evaluation, the instructional aids or materials to be used and the guidelines for teacher training and textbook production. So, in a sense, after a curriculum report is finalized, the work on the production of textbooks by the Textbook Boards, training of teachers and production of instructional aids, is started. This means that when the new curriculum at various levels is introduced, the teachers are trained and all instructional aids and textbooks are made available for effective implementation.

Curriculum development issues and concerns

The National Bureau of Curriculum and Textbooks, along with other institutions, has done a great deal to promote curriculum revision, production of textbooks and to initiate the developmental process of curriculum making as an on-going activity.

A number of problems have become manifest, including the ones discussed below.

Communications

The first problem is of communication between the policy makers at the federal level and those who develop curriculum at other levels of education; and communication between those who develop curriculum and those who are responsible for implementing it at the grass-roots level, that is the teachers. The policy makers are familiar with the philosophy behind the new curriculum, but to disseminate the philosophy in such a way that its revolutionary concepts are accepted by the subject specialists, the educational administrators and teachers, is one of the major problems.

The problem of communication becomes still more complex and perhaps formidable because each participant in the National Committees comes with a unique set of views, beliefs and convictions which are valid in their own right, and members find it extremely difficult to see other points of view. Proposed changes and innovations are sometimes not seen or understood because of preoccupation with traditional views or personal loyalties.

Then there is the problem of synthesizing divergent points of view in a democratic setting. The fabric of committees with their broad-base, on the one hand, ensures participation and involvement of all cross-sections of the professional institutions participating in the educational effort of the country, but on the other hand, it raises the problem of putting together and synthesizing different points of view. Approval of the scheme of studies for classes IX-X, particularly the inclusion of the heavy vocational component as a compulsory subject may be taken as an example. There was an extensive debate before the matter was finally decided.

The interesting thing, however, is that so far, the educators have in the end agreed on solutions to various problems; solutions which are not only in consonance with the objectives of the Education Policy but suited to the special circumstances of Pakistan.

Supporting services and finances

The second major problem encountered in the implementation of curricular reforms at the grass-roots level is that of being able to provide necessary supporting services. The effective implementation of curriculum involves adequate pre-service and in-service teacher-training programmes, orientation of supervisors and administrators, production of adequate textbooks and workbooks, and provision of teaching aids, laboratory equipment and supplementary reading materials. Besides necessary financial resources, adequate co-ordination and management are required at all levels.

Like most developing countries, Pakistan is encountering serious difficulties, particularly in finance where curriculum revision and implementation have to struggle hard to find a suitable place in a situation of competing priorities. For the production of good textbooks and other reading materials, the rising cost of paper is a formidable problem. In the case of providing teachers' aids, while standard teaching kits have been produced, the problem of finance for supplying them to all the institutions has become quite acute. The National Bureau is focusing its attention on this issue and has even approached international aid agencies for assistance. Teacher training programmes are a high priority and various schemes are being processed to secure finance for these programmes. The teacher training programmes launched so far are not of adequate duration. An element of continuity also needs to be woven into the system. The system of in-service training needs further decentralization so as to provide institutional arrangements for teachers at the grass-roots level, and within cycling distances.

Evaluation and feedback

The third major problem is that of evaluation and feedback. Curriculum development is a continuous process. While evaluation and feedback in the process has been ensured through broad-based committee work, by wide circulation of draft curriculum for comment and by micro-testing, the evaluation of the product has to start now. While institutional arrangements for curriculum development exist, the need for the creation of a mechanism for constant feedback, evaluation and revision is being felt. Plans have been prepared for evaluating new curriculum introduced in classes I-X and for institutionalizing evaluation and establishing a continuous and effective liaison between those who evaluate and those who revise in the light of the evaluation.

Organization

The fourth problem is of an administrative-cum-financial nature. The National Bureau is performing a job which is of a purely academic nature, very different from that being performed by various ministries and government departments. The basic problem seems to be that while, on the one hand, the NBCT is a government organ to which the normal

administrative and financial rules apply, on the other hand, the nature of its functions necessitates a certain freedom and autonomy which is generally not possible within a government body.

If it is given an autonomous status, the fear is that it will lose its close link with government and therefore the power that it has as a government organization. However, the present administrative and financial rules are perhaps a constraint on the smooth functioning of curriculum development plans. With these problems in mind, guidelines for future action in curriculum development have been proposed. These guidelines give greater emphasis to empirical evidence about assumptions underlying the new curriculum. Evaluation, particularly of pilot programmes, is seen to be very important. In addition, future plans will give greater attention to systematic organization of teacher training.

PAPUA NEW GUINEA

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Background

The establishment of the Curriculum Unit at the end of 1974 took place on the eve of Independence and coincided with the publication of a five-year education plan designed to render the education system more relevant to the needs of the people. A further coincident development was a realization that now the days of assured wage employment for the schooled were well and truly over, a major re-orientation of the curriculum was necessary. The writing had been on the wall for long enough; some had even read the writing aloud for the edification of others. Now it was sufficiently emblazoned for all to note.

I need hardly point out the immense difficulties involved in trying within the one system to educate for self-fulfilment those students who can never hope to gain a salaried position, along with those who will get jobs. One common element in their schooling will be to ensure that those thinking and adaptive skills required to facilitate self-improvement and an ability to adjust to a rapidly changing environment are adequately developed. Beyond that, the content of formal syllabi is bound to be an uneasy attempt to meet dichotomous needs.

These facts gave rise to the concept of community education, and to the need to rethink not only the primary curriculum, but the secondary curriculum as well.

The Introduction to the Community School Syllabus outlines the concept of community education thus:

'Community school' for us means that its teaching and learning is related to the community and its activities. This is to give students a useful background to live and work in the community. It means that curriculum begins with the activities of the local community. It leads from this to the national community and its activities. This will help widen the thinking and outlook of the students.

Some parents will ask: why send children to school if this is not going to get them jobs? The answer is this: a child who can count, read and write has a set of skills that are useful to him in any community. The ideas that children get from subjects like community life help them to be better citizens and to help build up their own communities. By helping to build up their own communities they can help to make our nation strong.

A school that is related to its community gives parents the chance to learn a lot. They can become involved with what their children are doing at school. This too can benefit the community.

The Five-Year Education Plan sees the need for a new direction in primary education. This does not mean that the entire content of the syllabus must change. Rather it is the attitudes of teachers and the ways in which schools work that need to change.

Knowledge changes and we do not know what will be most useful ten years, or even five years from now. Therefore, it is not possible to try to teach now all the knowledge the child will need as an adult. Instead we must try to develop people who like to learn. They must do it so well that they will be able to learn later in life whatever they need to know. It is not the subject matter that makes some learning and one kind of education more valuable than others, but the way (or attitude) in which the work is done.

Communities and cultures change. The community may not want to keep some old or bad customs. Other changes will come because of contact with new ideas, new ways of doing things and other cultures.

The school, then, needs to be a place where children learn to think, to reason, to discuss and to make responsible decisions.

The new curriculum needed to reflect the needs and values of Papua New Guinea, not the former metropole. It must take account of the increasing number of secondary students forced out of the system after Grade 8 and for whom employment opportunities were rapidly disappearing. It must continue to prepare others for employment and for further education.

So it is that syllabi for all subjects in all grades from 1 to 12 have been rewritten since the establishment of the Curriculum Unit. Curricular objectives are:

At primary level:

- To develop literacy in English to a level that will help facilitate the communication skills necessary for national unity and national development;
- To develop an attitude of mind that will enable school leavers to participate in rural life in a constructive and fulfilling way;
- To develop knowledge and skills that will enable students to continue with their formal education.

At primary level, similar aims pertain. We can add:

- To develop knowledge and skills that will enable students to engage in wage employment.

Underlying all of these, of course, are the vital needs to educate both for individual self-fulfilment and for national development.

For over a decade, the Education Department has been in the vanguard of efforts to decentralize decision-making. However, in the area of curriculum, rather tight headquarters control has traditionally been exercised.

The concept of community education at primary level imposed, by implication, a need to decentralize elements of the curriculum to bring it into line with the needs of the nineteen provinces and multiplicity of diverse communities within each province.

For several years, as the new community schools curriculum was prepared, and in the absence of political decentralization, the community education ethos remained little more than a pious hope. However, with the advent of provincial governments - which began to emerge during 1976 - considerable pressure began to be exerted on the national government to indicate just what powers provinces did have with respect to the content of schooling. The matter has not yet been resolved to anyone's complete satisfaction. But before the end of 1979, Parliament was to have enacted an Organic Law, a section of which was to delineate headquarters and provincial roles in primary curriculum.

This first level of education occupies six years. Core subjects (for want of a better term) will remain the concern of national headquarters. However, there is expected to be considerable scope for provincial involvement in curriculum development in the community based subjects. The curricula of both provincial high schools and national high schools remain wholly in the hands of national headquarters.

National goals

The Introduction to the Community School Syllabus states:

The Department of Education is guided by the Government's Eight-Point Plan. This plan emphasizes rural development and self-reliance. It also says that all parts of Papua New Guinea must share in the development of the country.

In our Five-Year Education Plan we have tried to follow these ideas of rural development and self reliance. We have also tried to follow the idea of sharing in development by planning for many more community schools in those provinces which have so far lagged behind others. We hope that, eventually, all children of school age in Papua New Guinea will have the chance to attend a community school for six years. This will take a long time and it will need a lot of help from the communities if it is going to work well.

(a) Schools for rural development.

Children and their parents must get used to the idea that the purpose of community schools is to educate children to live in their community after they leave the community school. As well, it will prepare some for further education in secondary schools. The time has long passed when the main aim of these schools was to prepare children for secondary education and jobs in the towns.

It is not easy for children and parents to accept the idea that going to school will not lead to paid employment for everyone.

But the fact is that most people of Papua New Guinea live in rural areas and the resources that most people can use are in rural areas. For many people *there is more future in such activities as small-scale development of agriculture projects and village handicrafts than there is in large-scale development in the towns.*

(b) Self-reliance for teachers.

Papua New Guinea is not a rich nation. We cannot afford the luxury of buying large amounts of imported textbooks to use in our schools. More and more, teachers will have to use improvised learning materials they can obtain locally or that can be provided by the community. Effective lessons can often be given just as well by using local materials.

To achieve these national goals, curriculum must embody a number of major features:

- It must provide premature school leavers with factual knowledge sufficient to enable them to contribute creatively to life in rural communities. A knowledge and understanding of their immediate community and of the nation as a whole, for instance, is one prerequisite for the development of national unity. Knowledge about letter writing will be a necessary part of any attempt to get assistance from the Rural Development Officer. Any attempt to start a small farming project in the village will require a sufficient level of numeracy to facilitate ordering of materials, basic keeping of accounts and an ability to detect inevitable attempts by some storekeepers to cheat. Any number of like examples spring to mind.
- Our economic and political development is premised on an Eight-Point Improvement Programme dating from Independence. Fundamental to that programme is a primary commitment to rural development. Thus the school system assumes a responsibility to do its bit to shape attitudes. Those destined for wage employment must take with them an empathy for the rural poor and a commitment to work in the interests of those rural poor. Those destined to remain in the village should be imbued with an attitude sufficiently positive to temper their disappointment at being pushed off the road to a salary, and with an appreciation of the possibilities for personal and community development at home.

I need hardly explain that this curriculum aim is more easily announced than achieved. Especially as the community as a whole - the parents - continue to aspire on behalf of their children to office jobs. Indeed, if I may add an aside, there is some reason to suppose that many parents are failing to send their children to school in the knowledge that it is not the avenue to employment they expected it to be.

- A primary objective throughout is not just to perpetuate knowledge or to extend existing knowledge, but rather to foster the creation of new knowledge derived from the solution of new problems that are being recognized now or will be in the future. The attainment of this fundamental goal must run parallel to, and in fact be aided by, the attainment of utilitarian skills

and techniques, together with an attitude of mind conducive to the application of these skills and techniques to novel situations.

- Related to all these is the critical importance of maintaining a respect for our culture. At a time of extraordinarily rapid change and under the impetus of seductive foreign values conveyed through the media, through the presence of large numbers of foreigners (however necessary they are) etc., it is all too easy for things Papua New Guinean to be rejected. Clearly we must change. But this is not to say that every effort should not be made to retain as much as possible of our immensely rich cultural heritage.

It will be apparent from all this that we are by no means hung up on any one approach to or philosophy of curriculum. Rather, we have what we hope is a practical amalgam of elements of sundry philosophies: an amalgam which aims to foster both individual and national development. That we are a long way from the ideal cannot be gainsaid. Nor can the knowledge that massive problems abound. But we are bolstered by the realization that we are young and that we are getting there.

Institutional profile

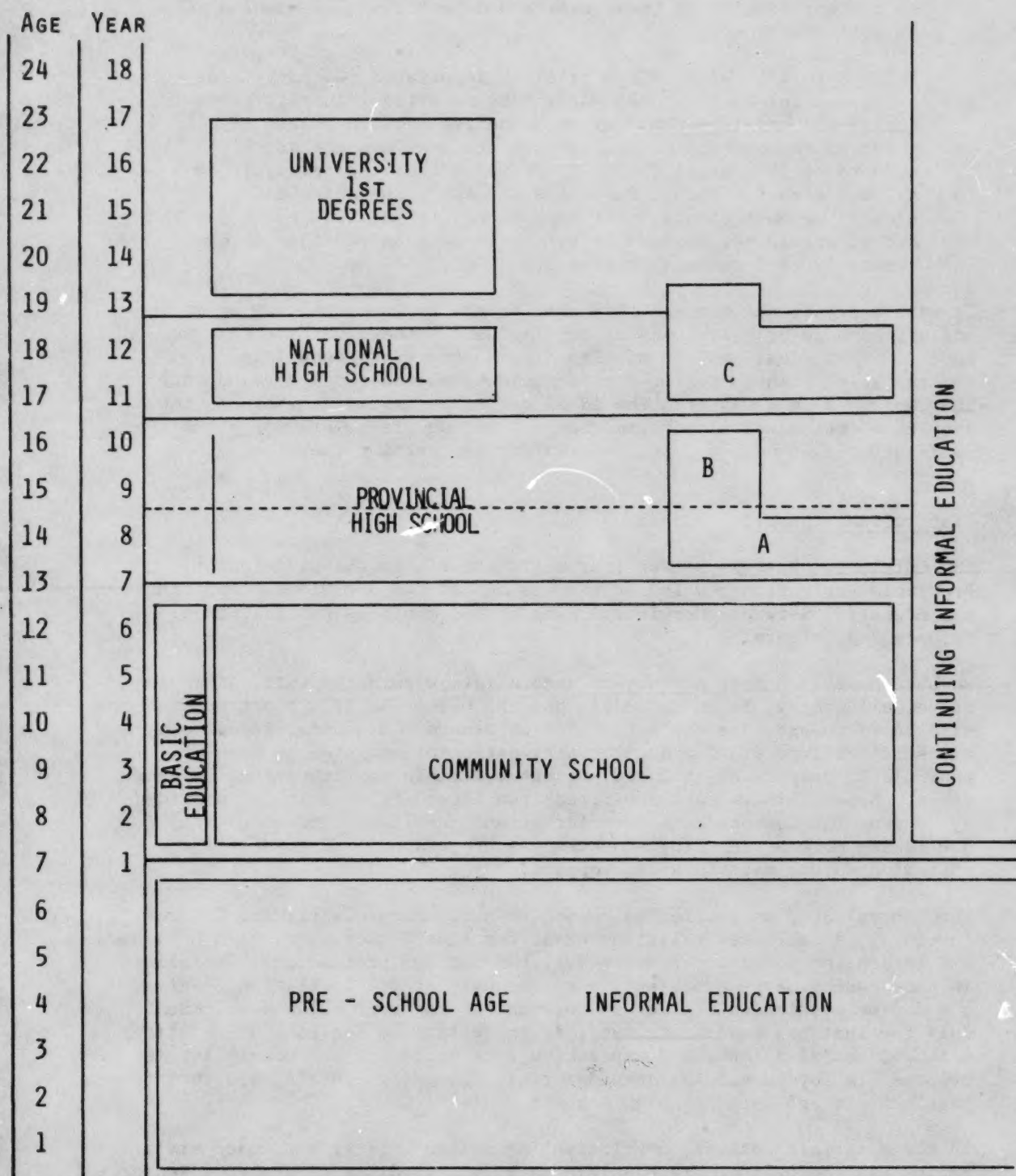
The Curriculum Unit is one of four units comprising the Division of Provincial Operations, which in turn is one of two divisions comprising the Education Services Provincial Wing of the Ministry for Education, Science and Culture.

We have a small number of subject specialists within the Unit. This is quite deliberate. It is intended that the main role of subject specialists will be to co-ordinate the activities of others. Teachers, inspectors, teachers' college staff and university personnel are used as much as possible to prepare syllabi and support materials in the various subject areas. Some subjects have benefited from inputs by consultants provided by Unesco, the Commonwealth Secretariat and the like. Indeed we are now making more of an effort to make use of personnel of this type to assist us in our materials development.

The General Studies section is headed by a Principal Curriculum Officer. Currently, established positions exist for nine Senior Curriculum Officers, a Co-ordinator Community Schools Syllabus and two professional assistants. In some cases, where a subject is taught only at one level of education, the Senior Curriculum Officer is responsible for curriculum development only for that one level. However, in subjects like English, mathematics, science, social science and expressive arts, each subject specialist is responsible for curriculum development in community schools, provincial high schools and national high schools.

In the Materials section, a Principal Materials Officer has under him a Senior Liaison Officer (responsible largely for editorial work), a Senior Materials Officer, an Editor of School Publications (School Papers) and two writers, an Audio-visual Aids Officer, a School Broadcasts Liaison Officer, three Materials Officers, illustrators and layout typists. A very recent development is the establishment, under the direction of a

PAPUA NEW GUINEA EDUCATION STRUCTURE



A NON-FORMAL PROGRAMME

B VOCATIONAL CENTRES

C TEACHER EDUCATION, TECHNICAL TRAINING, PROFESSIONAL TRAINING, UNIVERSITY DIPLOMAS

Unesco consultant, of a Production Centre attached to the Curriculum Unit. This is concerned with the development of low-cost teaching aids.

The Examinations section comprises a Senior Examinations Officer and two Examinations Officers. At present the actual preparation of examinations is in the hands of Senior Curriculum Officers who expect some professional guidance and administrative support from this section.

In the Research section, only one position exists - that of Principal Research Officer. At the moment his activities are complemented by the work of research assistants working on a short term Indigenous Mathematics Project. A Unesco-sponsored Director of that project will arrive shortly.

The Cultural Activities section comprises a single Cultural Affairs Adviser who collaborates with subject specialists to embody cultural activities within the curriculum.

Issues

Relevance

Clearly the reorientation of the primary curriculum to reflect both national development priorities and the realities of the school leaver problem, is a far-reaching attempt to provide an education that is relevant. But implementation of such an ethos requires more than mere promulgation and accompanying rhetoric. It will take time to rectify the mis-match between the community's expectations for the children and the new employment realities; meanwhile efforts to involve the community in the activities of the school will be only minimally successful. As long as large numbers of our teachers maintain similar attitudes and a disdain for rural life, we can hardly expect them to participate with enthusiasm in community life. Is the ethos viable in an economic environment that evidences a growing disparity between the haves and the have-nots? At this early stage we can do little more than ask the question. Meanwhile we ask much of our teacher-training programme as it seeks to prepare teachers to inculcate this new spirit of education.

I have alluded more than once to the difficulty of trying to provide a curriculum that is relevant to different sorts of student. It must cater differently for those returning to rural communities at the end of Grades 6, 8 and 10. It must cope with the different needs of those going into further education or paid jobs. And, over-riding all this, it must be Papua New Guinean.

Yet we have a Curriculum Unit which is overwhelmingly staffed by expatriates. However committed they may be and however empathetic, their view of what is or is not relevant is likely to be at variance with that of nationals.

Closely related to the matter of content relevance is that of relevance of standards and levels of attainment. For several years now we have been concerned about standards in the core subjects. The opinion is widespread that standards are falling, though there is no hard evidence to support this supposition. However, it does appear to be true that often standards are poor. Of course, standards are not absolute - they are nationally derived and reflect degrees of national development. That said, our

recognition of inadequate standards in some areas has not caused us at this stage to question the content of our curriculum; rather we are seeking to determine how we can better implement our existing (albeit newly derived) curriculum.

Localization and staffing

One of the facts of our colonial experience was the belated effort to include nationals in the process of development. This was tied up with the very slow development of the education system until the mid-sixties. Then, with the establishment of the first secondary schools during the early sixties, followed soon after by the provision of facilities for higher education, a sufficiently well-educated cadre of nationals existed to facilitate the development of a localization policy. The seventies have seen the implementation of a very rapid localization policy aimed at replacing expatriates in administrative and teaching positions. Thus, our teaching force comprises large numbers of Papua New Guinean teachers who as yet have had relatively little experience. This, in turn, has implications for the staffing of the Curriculum Unit. Since, in addition to a natural aptitude for curriculum development, professionals in this area need a considerable knowledge of, and experience in, schools, it remains difficult to identify nationals who can be appointed to curriculum development positions. We are gradually training nationals for a number of positions through a system of associateships. Meanwhile, we continue to have an unacceptably large number of expatriates defining and preparing our curriculum.

Relatedly, we do not find it easy to locate people in the field to assist us. I mentioned earlier that the staffing of the Unit is premised on the assumption that such assistance will be forthcoming. Unfortunately, the level of training and amount of experience typifying our teaching force is such that very few possess the skills we require. This state of affairs is worsened by the teaching loads in secondary schools and teachers' colleges - loads which leave staff with precious little time to devote to curriculum.

Curriculum implementation

Particularly in community schools, but also at secondary level, our teaching force is, by Beeby's categorization, at Stage 2. This has major implications for materials development and curriculum implementation. We have a new community schools curriculum. But, in most subjects, we do not yet have support materials. Consequently, most teachers very sensibly are not bothering with the new curriculum.

In the heady days of the Unit's first establishment, there was a strong body of opinion which held that teachers could now stand on their own two feet; that a detailed syllabus document would enable them to programme, produce their own materials and adapt existing support materials. Thus was begun a revision of the curriculum with scant attention to the production of teachers' and pupils' materials. All the evidence now is that, in the absence of highly structured and very detailed materials, the curriculum simply will not be implemented.

In-service training

I have noted the political pressures for the development, quickly, of a new primary curriculum. One undesirable effect is that such speedy development and implementation has prevented the development of a

satisfactory in-service training programme which should have been the basis on which attempts were made to have the new courses taught. Both inspectors and teachers remain inadequately informed about the aims and the content of new syllabi.

The entire in-service scene has long been an unsatisfactory element of our system. A long-standing National In-service Training Week has been characterized by poor administration and lack of direction. There has been inadequate communication between curriculum people and our Staff Development Unit - the body concerned to formally organize in-service activities. However, there are positive signs. There is now more of an attempt at partnership between the two units. Equally significant is the establishment, just this year, of an in-service training college for which we hold out great hopes. That said, a number of retrogressive attitudes remain to be broken down: at a recent planning meeting to discuss one of the college's new courses, one of our most senior staff development fellows had no hesitation in advocating a cut in the curriculum component from ten hours to six as the answer to a timetable overload.

Curriculum evaluation

The task of providing support materials in all subject areas as quickly as possible has imposed an immense workload on curriculum staff. Consequently precious little time is available for systematic curriculum evaluation. What evaluation there is, tends to be observational and judgemental.

I do not doubt that you are impressed by this lengthy list of problems and weaknesses. But the total picture is by no means as grim as it might seem. We do have our success stories.

Language of instruction

Having over 700 separate languages, Papua New Guinea is, linguistically, the most diverse nation on earth. For this reason it has not been possible to teach in the vernacular at primary level. Further logistical difficulties have prevented the use of any of our lingues francaes in the classroom: difficulties like the absence of texts and the inability of many teachers to communicate in these languages. Thus English is the language of instruction throughout. But the question is vexed. Increasingly, noises are being made at provincial level about the need to teach in local languages in primary school or to teach literacy in these languages. Increasingly, the incongruity between the philosophy of community education and the use of a foreign language to provide that education is being recognized.

Programmes

Community schools syllabus

Notwithstanding the difficulties outlined earlier, the mere fact of the new syllabus is a major achievement. Modifications will undoubtedly be needed as time goes by. But, in a very short period of time, a valuable document has been produced which provides the basis for a considerable redirection of our first level of education.

Secondary education

In a number of subjects, major syllabus revision is taking place. One of the most significant developments is the production of a new English

syllabus based on the functional approach to language learning. We know of no other country in which such a far-reaching functional syllabus has been produced for secondary schools.

Mathematics education

A variety of cultural factors have caused learning difficulties for students of mathematics in Papua New Guinea. Thus, for a number of years, a considerable input of manpower and expertise has been made in this area. The result is a new primary mathematics course with an impressive set of support materials and mounting evidence that student performance is improving considerably. An on-going Unesco-sponsored program at secondary level is achieving similarly pleasing results.

Secondary Schools Community Extension Project (SSCEP)

SSCEP represented a major curriculum development initiative in secondary education - though one which is not in fact being undertaken by the Curriculum Unit. The project is being trialled in five schools in different parts of the country, and is designed to determine whether the present secondary system can be modified to incorporate a more practical orientation without causing a decline in intellectual achievement. Teaching in Grade 9 and 10 revolves around a small number of carefully selected practical projects which will be used to develop basic technical skills as well as providing relevant opportunities for real application of core subject studies.

We hope that SSCEP graduates unable to find urban employment will be better prepared to accept responsibility as practical citizens in their home environment. If successful, SSCEP will gradually be extended to other schools throughout Papua New Guinea.

Decentralization

Our centre-periphery model of curriculum development is on the verge of being modified. Just what modifications will eventuate remains something of an open question just now. But it does open up interesting possibilities for more teacher involvement in curriculum preparation. It does provide greater opportunities for relevance in the curriculum - genuine implementation of the community education philosophy. Indeed, one of our most interesting projects currently is a small ethnic reading scheme aimed at the production of reading materials in the provinces for the various ethnic groups.

PHILIPPINES

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Background

The Philippines stands at the beginning of a decade of massive educational improvement. The move for educational change is everywhere and is aired by all sectors of society. Curriculum development activities are in the process of expansion as a consequence, and demands for evaluation of educational programmes are becoming the focal point. The curriculum development evaluation community, in response to public demand, is moving to assume leadership in this direction, with the goal of making certain that whatever curriculum changes may be instituted are firmly grounded on valid curriculum evaluation and research.

National goals

Curriculum development philosophy is based on the principles that:

- Education should be relevant - a refrain of development over the past decade;
- Education has to achieve and maintain an accelerating rate of economic development and social progress;
- Education has to assure the maximum participation of all the people in the attainment and enjoyment of the benefits of such growth;
- Education needs to strengthen consciousness and promote desirable values in a changing world.

These principles are evident in the intrinsic values and beliefs of the Filipino people as expressed in the following national education aims:

- Provide for a broad general education that will assist each individual, in the peculiar ecology of his own society, to attain his potential as a human being;
- Enhance the range and quality of individual and group participation in the basic foundation for individual development;

- Develop the high-level professions that will provide leadership for the nation; advance knowledge through research and apply new knowledge for improving the quality of human life;
- Respond effectively to changing needs and conditions of the nation through a system of educational planning and evaluation.

Time moves fast and society changes inevitably. A progressive people cannot turn their back on these realities. At the moment, when the Philippines is in the throes of establishing the New Society, all efforts are geared towards national development goals, the educational sector not excluded. Research to date has been geared towards rural development - the improvement of the lot of the common man and the greater majority of those in the rural areas. Priorities have been established. The immediate eleven basic needs of a human settlement which have been identified by the Minister of Human Settlements, Mrs Imelda Romualdez Marcos, are water, power, food, clothing, economic base, medical services, education, culture and technology, ecological balance, sport and recreation, shelter and mobility. All research - educational, social, economic, health, etc., aims to achieve these government goals. Specifically in the educational sector, on-going research is on democratization of access to education, raising the literacy rate of the country, bilingualism, the accreditation and equivalency programme to bring back into the formal school system the alarming number of early school leavers, and the training of out-of-school youths in some kinds of job to boost the manpower stock of the country.

It is felt that nothing is too difficult to achieve when agencies co-operate and resources and facilities are put at the disposal of the researcher. If we adopt the concept that the main purpose of education is to arrive at scientific solutions to man's problems, and bring about improved quality of life for the citizen, then we must pool our resources and plunge into curriculum domains that will contribute towards the realization, not only of overall national goals of developing countries like the Philippines, but also of acceptable standards of educational planning and decision-making.

The National Educational Testing Center

Presidential Decree No. 146 declared it a policy of the State to maintain the highest quality of education for purposes of national development. In pursuance of this policy, all high school graduates are required to qualify in a National College Entrance Examination (NCEE) prior to their admission to any post-secondary degree programme necessitating a minimum of four years of academic study. Implementing rules and regulations were formulated and subsequently approved by the Secretary of Education and Culture. An Advisory Board was created, the principal functions of which are to look into the effective implementation of, and to recommend policies relevant to, the provisions of the President's decree.

An agreement entered into between the Department of Education and Culture and the Fund for Assistance to Private Education authorized the latter to develop and administer the 1973 examination. In 1974, the NCEE Center of the Department was created, with an Executive Director as its head. Although the design of the 1974 exam was still the responsibility of the Fund for Assistance to Private Education, administration was taken over by the NCEE Center.

Towards the latter part of 1974, the complete take-over by the Department, of the development and administration of the 1975 examination was announced. In 1975, the National Educational Testing Center (NETC) was formally created by the National Government through Presidential Decree No. 1 (Reorganizing the Executive Branch of the National Government), to take leadership in the area of measurement and evaluation in the Philippines.

For the maximum utilization of National College Entrance Examination results, and other tests for guidance purposes, the Research and Guidance Division of the NETC, in addition to its functions and responsibilities, serves as the central support system and monitoring feedback mechanism.

The functions of the NETC as defined by law are:

- To provide a workable management model for the National College Entrance Examination and other tests designed to identify talents for scholarship purposes and for measurement and evaluation schemes that will service all educational levels;
- To provide leadership for a feasible, practicable and efficient model for an overall evaluation of existing and future testing programmes;
- To provide evaluation schemes for educational innovations currently undertaken;
- To consider a broader concern with basic educational problems through research and measurement techniques including guidance;
- To consider a programme of empirical research for continuing test development efforts; and
- To provide programme evaluation strategies.

Relations with other institutions

Curriculum development is undertaken by a number of institutions, such as the Curriculum Development Center for Science, the Curriculum Development Center for Social Studies and the Bureau of Elementary and Secondary Education of the Ministry of Education and Culture. Attempts are made to ensure that the Ministry's regional offices, individual schools, professional associations, parent organizations and other community groups are co-ordinated at a national level by these curriculum development centres and bureaux. The final

decisions concerning the inclusion or extension of areas of study in school curricula are made by the highest policy-making body in education - the National Board of Education - upon the recommendation of curriculum developers in curriculum centres and the staff of educational bureaux of the Ministry of Education and Culture. This is done in conjunction with major groups of educators, school administrators and other representative groups.

Scale

The Executive Director leads a staff of approximately 130 professional and support personnel who bring to their work expertise gained in measurement and evaluation, psychology, education, guidance, management, etc. Some teach in the universities and graduate schools on a part-time basis while others serve in elected positions in professional organizations, both local and international. The staff is complemented by consultants with expertise in economics, statistics and when appropriate, by subject areas specialization in elementary secondary and higher education. It is likewise supported by testing and guidance officers of the Ministry's regional offices. The Center operates in co-ordination with the entire educational field machinery and inter-agency support.

Budget for 1978 was 5½ million pesos.

Processes

Since the inception of the Philippine Educational System, several studies have been done to assess the status of education at various levels. Foremost among these studies are the Monroe Survey (1925), the Swanson Survey (1960) and the Presidential Commission to Survey Philippine Education (1970) which have yielded, among other findings, some information about the status of elementary education. The first two studies produced data about the mental abilities of elementary pupils and their achievement in reading, language and arithmetic, plus their socio-economic background as well as other factors like teacher and school characteristics. The Presidential Commission produced mostly descriptive sample surveys about educational outputs and operations. Possible causal relationships between educational outcomes and certain pupil, teacher, or school characteristics were also determined in the studies cited. As a consequence of each study, some significant policies were promulgated that have effected changes and improvements in elementary education. The most recent national survey of this magnitude is the project on Survey Outcomes on Elementary Education (SOUTELE) which was carried out in 1975-76. This project was designed to provide the decision-making machinery of the Government as well as researchers, planners and implementers, with the learning profiles of fourth, fifth, and sixth graders. The findings of Project SOUTELE led policy-makers to institute an educational reform (the Experimental Elementary Education Programme) that is currently being implemented on an experimental basis in selected elementary schools throughout the country.

Decision-makers and curriculum planners have been concerned with the problems of higher education since as early as 1970 when the aforementioned Presidential Commission was set up to concretize the reorganization of the system of post-secondary education. The reorganization had to take into consideration the relevance of the higher education system to social needs. Subsequently in 1972 the Educational Development Project Implementing Task Force was set up by Presidential Decree to implement the reorganization on the basis of continuing monitoring of the system. As a result, a study was undertaken to examine the validity of the State higher education system, which controls approximately 15% of higher education. Although this is marginal in quantitative terms, it is quite significant in so far as the country's needs for professional education are concerned. The most recent study dealing with the employment problem in the Philippines was that conducted within the framework of the International Labour Organization's Comprehensive Employment Strategy Mission under the leadership of Dr Gustav Ranis, just after the reforms under martial law had begun. This report contributed a great deal to preparing the national agencies for an in-depth study of the education system in general and the higher education system in particular. The Task Force took the initiative of launching a joint study with the International Institute of Educational Planning, and co-operation from other distinguished agencies such as the Fund for Assistance to Private Education the National Manpower and Youth Council, the National Economic and Development Authority, the National Educational Testing Center and the Bureau of Higher Education of the then Department of Education and Culture, gave the study its extreme importance.

The performance of secondary education had not been documented in a way similar to SOUTELE (for elementary education), or the State Higher Education Study and the Private Higher Education Study (for higher education). Aware of this, the Bureau of Secondary Education, in co-operation with the Fund for Assistance to Private Education launched in 1978 the Study of Secondary Education in the Philippines. The objectives of the Study are to identify the strengths and weaknesses of secondary education and correspondingly assess its effectiveness. Performance indicators will be devised to measure the external and internal efficiency of secondary schools. It is expected that the Study will provide a more succinct definition and articulation of programmes and projects necessary for secondary education to discharge effectively its role in the development of the country.

Issues

Rural education

Current educational thrusts in the Philippines focus on the development needs of the rural people. Existing curricula and school courses seem not to reflect the educational learning needs of both urban and rural communities. Educators, economists, social scientists, and other leaders have always been in agreement that education should be relevant to local needs, but it seems that despite agreement, this general objective has not been translated into objectives for curricular development. While it is true that a good number of programmes

are being undertaken to give relevance to education, most efforts are directed towards bridging the gap between in-school activities and out-of-school activities. The core of the problem, however, is to find out how wide the gap is. It may be much wider than we think, so identification of learning needs must be the first step.

Private education

The heavy reliance on tuition fees (92% as revealed in the Higher Education and the Labour Market Study) for financing of the private universities is one of the problems plaguing curriculum design and development. It has influenced decisions on what courses to offer only from the institutional economic point of view rather than from the point of view of the country's needs; thereby leading to duplication of popular but inexpensive courses in the same locality, and the proliferation of liberal arts courses which do not equip the student for working life.

Research and dissemination

Logistics is the foremost problem facing any group that undertakes curricular design and development. Decision-makers have to be presented with alternatives formulated on the basis of multi-disciplinary research on the findings of the education sciences. It has to be accepted that even the simplest research involves expense. The inadequacy of resources for research on a continuing basis cannot be underestimated as a grave threat to the curriculum programme.

Another problem is the lukewarm attitude towards research. It is only a minority that realizes the value of and the benefits that may be derived from research. In a recent study on Graduate Education in the Philippines conducted by Dean Leopoldo Yabes of the University of the Philippines, only 14% of the students included in the sample indicated that training in research and acquiring research skills were what they value most in graduate courses.

It may be said, though, that as a people, the Filipinos are slowly and gradually adopting an attitude conducive to research. This is attested by the setting up of sections in government and non-government agencies whose primary function is the conduct of studies, the results of which are to be used to improve existing conditions as well as to be a basis for decision-making.

These are only a few mechanisms whereby research findings can be disseminated. The main ones are: professional associations and organizations, (primarily through their journals such as the Philippine Association of Graduate Education, the Society for the Advancement of Educational Research; the Philippine Journal of Education, etc); the universities, (primarily through their instructional programmes); the Ministry of Education and Culture, (for instance, through the National Educational Testing Center) the Educational Development Projects Implementing Task Force; private non-profit organizations like the Fund for Assistance to Private Education, etc., and very minimally, the mass media that can carry only interpretative summaries. Aside from the foregoing, the backlog in the mails and

the language barrier are both deterrents to the expeditious dissemination of research findings, and the basis of the problem is the topography of the country, which is composed of more than seven thousand islands. Thus inadequate travel and communication facilities threaten curriculum development to a serious extent because constraints in dissemination naturally result in inadequate implementation. The production of materials to be distributed, the publication of curricular outputs through journals and other printed matter, and the use of media for dissemination are very expensive processes for which low budgetary allocations are still a major constraint.

The problems associated with curriculum reform call for a sophisticated methodology, an interrelated assembly of approaches and methods and an over-all concept capable of steering action in the right direction. Research bodies and curriculum planners rarely have the kind of resources which would enable them to expand the nature of their work and enter into broad and systematic communication with educators, pupils and parents. Thus decision-makers are often unable to anticipate and evaluate the economic, socio-political, and cultural implications of far-reaching change.

It was possible in the past for each office to undertake the assessment, review and modification of over-all policies or strategies for curriculum development. This practice led to compartmentalized decisions and fragmentary policies. There is, however, a present tendency to centralize assessment and analysis of results. The National Educational Testing Center may in the future help policy and assessment-makers in a more effective manner.

Programmes

The National College Entrance Examination is a programme that involves the development and administration of a scholastic aptitude test to students seeking admission to any post-secondary academic or professional degree programme necessitating a minimum of four years' study in any private or public institution of higher learning. It aims to maintain the highest quality of education in the Philippines by regulating the admission of students from secondary to the post-secondary institutions of learning, to promote national development, and ultimately, to help maintain a viable balance of all types of worker in the manpower stock of the country.

The NETC developed the Philippine Specific Aptitude Test Battery to complement the results of the National College Entrance Examination so as to assist guidance counsellors in streaming students into proper career areas.

The Philippine Educational Placement Test was developed as a battery of education development instruments to assess knowledge, skills and work experience in various areas to be accredited for academic equivalence. The equivalence will be the basis for grade/year placement of school leavers, for either promotional or training purposes.

In connection with the Partnership for Human Development between the Department of Education and Culture and the Philippine American Life

Insurance Company, starting in the 1977-79 school year, the NETC has been charged with the screening of applicants from different parts of the country for a graduate-level scholarship programme in guidance. The screening consists of a personal interview, a written test on general preparation, and a personality test, all prepared and administered by the NETC.

As well as teacher selection tests, personnel analyst and leadership training tests, management tests, teacher examinations and the Philippine Specific Aptitude Test Battery, the NETC prepared and administers the State Scholarship Test, the National Integration Study Grant Test, the Qualifying Examination for Rebel-Returnees and Their Next-of-Kin, the Teijin Scholarship etc.

The Philippines shares with all the developing nations the basic problem of illiteracy among its people. Of its population of 29.4 million whose ages were six years and above in 1970, some 6.9 million (nearly 24%) were found to be illiterate.

The findings of the above-mentioned Survey on Outcomes of Elementary Education (SOUTELE) conducted in 1975, showed that on the average, elementary school graduates across the nation, after six years of basic schooling, have learned only two-thirds of what they should have learned, and that the subject areas which they seem to have learned least are those which have traditionally been referred to as the three Rs - reading, mathematics, and language. The scores of elementary school students as reported by Project SOUTELE were quite low (less than 50%) however, of the 'achievers' group, 94% scored what was equivalent to three grade levels higher than the grade level they dropped out from. These facts necessitate an empirical study focusing on the situation of those who did not have the chance to finish the cycle of elementary education, and addressed directly or indirectly to the following policy issues:

- Should we extend or shorten compulsory education to fulfil the objectives of basic education?
- What improvements or revisions need we institute with respect to the content and delivery of elementary education, to attain the stated minimum level of achievement for each grade level?
- What alternative structure or format of basic education need we adopt to minimize wastage, and optimize utilization of the country's resources in the attainment of explicitly stated objectives?
- When other important variables are held constant, what level of previous schooling is associated with the maximum level of additional learning?

The results of this study will be used in:

- The rationalization of the system of basic education;
- Focusing goals and objectives, and developing appropriate designs of programmes and modes of educating and training the out-of-school

population in general and illiterates in particular;

- Effective human and non-human resources planning, mobilization and/or allocation and utilization in both formal and non-formal systems of education.

The project will take the form of a national study on literacy achievement and retention rates of elementary school leavers, and aims to answer the following questions:

- What constitutes the core of learning gained from basic schooling in the Philippines?
- What is the amount of basic schooling required to give Filipinos permanent literacy and numeracy skills?
- What factors affect the acquisition, retention or additional gain or loss of basic skills acquired from school in the Philippines?
- What skills are learned by those who drop out from formal schooling, in addition to the basic skills earlier learned in school?
- What is the contribution to additional learning of factors such as:
 - basic mental abilities
 - length of previous schooling
 - age or maturation levels
 - personality variables
 - on-the-job training
 - exposure to mass media
 - work experience
 - peer group influence
 - rural or urban background?
- In what subject areas are the gains highest and where are they lowest?

Another important aim of the study is to attempt to arrive at a more functional definition of literacy by answering the following questions:

- What levels of literacy are associated with the varying degrees of social and economic status? and
- What skills (which are not school-derived) do those who seem to be 'coping' with life possess?

The study will involve a battery of tests, plus ethnographic studies to determine the mode of coping with life of two carefully selected groups 'illiterates' and those who prematurely left elementary school. This latter group is further subdivided into:

- Those who have retained certain levels of proficiency in literacy, numeracy and other basic skills;
- Those who have gained proficiency since leaving school;
- Those who partially retrogress;
- Those who lapse into illiteracy.

Republic of KOREA

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History

The history of curriculum development in the Republic of Korea dates back to the introduction of the modern school system. Many curriculum reforms have been proposed, but those deserving mention here had their beginning with the Liberation in 1945.

For the period from the Liberation to the birth of the Republic of Korea, the main thrust of educational effort was to eradicate the remnants of the pre-Liberation education system and set the stage for the development of a democratic system. To begin with, provisional curricula and textbooks were prepared in the Korean language.

The effort at curriculum revision began to gain momentum with the promulgation of the Education Law in 1949, but it was called off with the outbreak of the Korean War in 1950. During the war, education was governed by 'Emergency Education Acts' enacted to meet social demands under the combat situation. Accordingly, school curricula were geared to developing the ideological stance of the Korean people and patriotism amid social disturbance.

As the Republic of Korea was restoring social stability, with the conclusion of the war, the climate was conducive to an attempt at curriculum revision on the basis of the educational ideals manifested in the Education Law. Revision work was initiated in 1952 and concluded in 1955. This curriculum was in fact the first ever developed formally by the wisdom of the Korean people with the aim of realizing their own aspirations. The curricula were designed so as to relate learning experiences to real life. They also reflected the social demands of the particular time by stressing moral education as a means of accelerating the re-establishment of social order.

Following this first curriculum revision, the social context of education underwent a dramatic change, and the need for another curriculum revision became all the greater. The nation's growing concern with its economic and industrial development led to an upsurge of interest in science and technical education. The newly revised curricula were promulgated in 1963, and laid emphasis on the development of self-sufficiency and productive skills of students. Concomitantly, the principle of integration of subject matter was stressed. In high schools, curriculum was divided into two streams - academic and vocational - so that pupils were able to choose the course suited to their interests, aptitudes and abilities.

A significant event in the development of Korean education was the promulgation of the Charter of National Education. It gave education maximum visibility and pointed the direction in which Korean education must go. The Charter, promulgated on 5 December 1968, presents the image of the ideal Korean people, which education should strive to create. Thus, the promulgation of the Charter ushered in another cycle of curriculum revision. The revision work was initiated in 1972, starting with the translation of the Charter into specific educational objectives. These were again translated into curricular organization and materials, which were subsequently woven into a coherent substance. The curriculum developed through this procedure laid special emphasis on inquiry in learning - especially in mathematics, science and social studies.

National goals

Those seeking to reform curriculum are confronted with complex issues pertaining to what is to be learned in the schools, who is to determine what is to be learned, and how continuing curriculum revision is to be conducted and controlled. These questions provide an appropriate framework for the development of a philosophy underlying curriculum development.

Thinking along these lines we come to the task of setting up educational goals. The major source of educational goals in the Republic of Korea is the Charter of National Education. In addition, there are national needs and individual needs which provide significant inputs towards the clarification of goals.

We look to education as a means of accelerating national development by serving the nation's political, economic and social needs. In this context, educational goals can serve as an effective tool for the realization of an industrialized, free and democratic society where every individual is guaranteed higher quality of life. Social equality and a creative development of culture also are concomitant national needs.

On the individual level, education is expected to produce the educated, rounded man. Emphasized here are strong motivation for self-fulfilment, moral consciousness, aesthetic taste, creativity, co-operation and health. These two goals of education may sometimes conflict with one another, but it is important to note that they constitute two sides of the one coin, so that the problem of maintaining balance between the two is a constant challenge to curriculum developers. The popular emphasis on 'quality in education' does not just involve the gearing of education to national socio-economic needs, but also heightens our concern for the fullest development of individual potential.

Discussion on the quality of education leads us to more questions: To what extent does our educational system reflect the development needs of the nation? How far does it cater for the development needs of individual students? Is it varied enough to provide for the heterogeneous needs, aptitudes, interests and learning abilities of pupils? What provision is there for a rounded development of the individual child? To what extent does it prepare its students for adjustment to changing situations and for responsibility as a member of the community, the nation and the world? Answers to these questions constitute guidelines for the development of curriculum and also provide specific criteria against which curriculum must be continuously evaluated.

Institutional profile

In the past, curriculum design and development had been the responsibility of the now-defunct Textbook Compilation Bureau within the Ministry of Education, assisted by its Curriculum Deliberation Committee.

Professional work related to research, development and evaluation had been left to individual scholars on a scatter-shot basis, with little effort made to co-ordinate them in a meaningful way. Of course, they were poorly funded. Although the Textbook Compilation Bureau had, as an advisory body, the Curriculum Deliberation Committee which was of an ad hoc nature, this Committee had little to do with actual research and development work.

The major weakness of this system was that research activities were not effectively linked to curriculum development, with a resultant lack of consistent input of research results into curriculum reform. The Textbook Compilation Bureau was too under-staffed to carry out appropriate research and development activities.

The lack of professional capability on the part of the Ministry of Education gave rise to the necessity of delegating professional work to a research institute. This led to a meeting between the Ministry of Education and the Korean Educational Development Institute (KEDI) in February 1979, at which the roles of the two were clarified. As a result, KEDI came to be responsible for the design and development of curriculum and textbooks and basic studies related thereto, while the Ministry took on over-all planning and co-ordination, which included work-scheduling, preparation of guidelines, organization of advisory committees and implementation of policy measures for administrative support.

As a response, KEDI created a Department of Curriculum Development, staffed with ninety researchers, representing a wide range of fields. In order to increase its professional capability, KEDI is assisted by a Curriculum Development Committee, composed of professionals drawn from without.

By and large the job of curriculum design and development in Korea is centralized, but this does not exclude the participation of regional authorities and individual schools. Rather, it is institutionally arranged for the participation of leaders from various walks of life, including scholars, subject-matter specialists, learning psychologists, curriculum specialists, measurement and evaluation specialists, teachers, parents and pupils.

Style

The way in which educational goals and objectives are evolved has significant implications for the approach to curriculum development, because they determine not only what to learn but how to teach and evaluate. Granted that the classroom teachers are in the long run the implementers of curriculum, their participation in the process of setting up goals and objectives is much desired. Therefore, it is imperative that an in-built mechanism be provided in curriculum development for the fullest measure of participation of teachers in setting up major goals and objectives of education.

Another important consideration in this context is the clarity of objectives. Frequently, we see objectives stated in vague terms that are susceptible of varying interpretations. There is an urgent need to provide guiding materials that keep both teachers and pupils in sight of the objectives pursued. To meet this need, KEDI has developed a handbook entitled 'Elaboration and Specifications of Educational Objectives' and has disseminated it to all teachers across the nation.

In discussing the philosophy behind curriculum development we find ourselves confronted with the question: what is to be learned? In the past, the sheer accumulation of knowledge has been over-emphasized in the curriculum, and emphasis on higher mental processes has long been overdue. KEDI's approach is based on the principle that the curriculum must have fresh infusions of content and a comprehensive reorganization, emphasizing concepts, key ideas, principles and modes of inquiry.

Not to be overlooked in this connection is the quality of teachers, because the successful implementation of curriculum is largely dependent on it. It is essential that the pre-service training of teachers be based on the new curriculum. Equally important is the in-service training which must go side by side with curriculum reform work. As we all know, retraining of teachers must precede the implementation of the new curriculum. Both pre- and in-service training of teachers are treated as integral parts of curriculum development.

Finally, curriculum reform tends to be primarily concerned with programmes which take the form of in-school activities. Apart from the manifest curriculum, there is always the possibility of hidden learning in the instructional process, and this has recently received the growing attention of curriculum developers for its significant impact on learning outcomes. Therefore, KEDI is not only conducting continuous studies of latent curriculum, but is linking results to classroom teaching, by including relevant principles and methods in the teachers' guides.

Processes

Curriculum revision in the Republic of Korea is on a six-year cycle. In accordance with the division of functions, the Ministry of Education takes the responsibility for over-all planning and co-ordination, and the ultimate responsibility for developing the school curriculum lies with KEDI. KEDI's approach, as distinct from former methods, is research-based, and in general follows these stages:

- Basic studies; including philosophical studies on educational goals, analysis of national and societal needs, longitudinal study on the growth of Korean children, etc.;
- Formulation of specific guidelines for curriculum development and articulation of educational goals for each school level;
- Specification of educational objectives by grade and area of learning;

- Selection and organization of curriculum content and subject matter;
- Development of textbooks and instructional materials, including clinical evaluations;
- Try-out in pilot schools;
- Modification and preparation of the curriculum draft.

Evaluation is built in at each stage so that judgemental and clinical data are collected throughout the total process. The curriculum draft prepared by KEDI is submitted to the Ministry's Curriculum Deliberation Committee for final review. The process of review is supplemented by public hearings which aim at reflecting the opinions of the public as well as teachers. On the basis of their results, the draft may undergo another cycle of modification before it is adopted as a formal curriculum. In addition, the Ministry operates a monitoring system to obtain feedback from the grassroots level. In parallel, as indicated earlier, teachers are retrained in the new curriculum and new supervisory guidelines are formulated to help supervisors at the local levels guide the instruction of classroom teachers.

It takes several years to go through the aforementioned cycle. One year is devoted to curriculum design and one more year to the development of a syllabus. This is followed by the development of textbooks and instructional materials, which takes two years. Subsequently, one year is given for field try-out and one for teacher retraining, followed by modification and refining of one year's duration. The curriculum development starts with the elementary level and moves on to the middle and high school levels with two-year intervals between the school levels.

It might seem that this procedure is indicative of a rigid from-the-top-down approach. In reality, however, it has a built-in mechanism which provides for channelling research results into curriculum development at the levels of grade, area and classroom. In order to cover the entire gamut of subject areas, the Curriculum Development Department has nine subject-matter teams assisted by a force of specialists drawn from outside. As earlier indicated, KEDI has a Curriculum Development Committee composed of people representing various walks of life. Some of the Committee members also serve on the subject-matter teams, thus maintaining linkage between the two. Thus, efforts are made to reflect fully the wisdom of these people at each stage.

Besides the studies related to curriculum development, there are parallel studies presently under way. They are: curriculum development in basic sciences; an international comparative study of curriculum development systems; development of vocational and technical education and a study for the improvement of foreign language teaching.

Throughout the entire process of curriculum development, there is a close co-operation between the Ministry of Education and KEDI. Although their functions are divided, they are so closely entangled that the performance of each one's roles requires the participation of the other. Thus, curriculum development in the Republic of Korea is a joint effort of the Ministry of Education and KEDI.

Issues

Although the full-fledged involvement of KEDI in curriculum development is of rather recent origin, KEDI has gained a significant amount of experience in curriculum-related studies through its Elementary-Middle School Development Project, its Skills Learning Development Project, its Population Education Development Project, and its other commissioned projects. After being designated as the curriculum development arm of the Ministry of Education, KEDI has encountered a number of problems, mainly resulting from the urgent necessity for rapid expansion in terms of the number of research personnel and administrative and financial supports. Prominent among these issues are the following:

- Curriculum development requires a balanced representation of specialists in all of its related disciplines. In reality, however, such a case is a rarity, mainly because of the shortage of subject-matter specialists equipped with both pedagogic theories and sufficient teaching experience in the elementary and secondary schools. Viewed in a broad context, this problem may be traced, in large measure, to the teacher training system, whose reform constitutes a significant area of inquiry.
- Since there is only one standard curriculum in the nation, there is no provision for alternative curricula to meet unique local needs and the varying interests and abilities of pupils. Realizing this problem, KEDI is developing special programmes for compensatory and enrichment purposes. Yet there is still a need to develop alternative curricula designed to meet varying local needs. This matter will receive greater attention in due course.
- The problem of maintaining balance in the curriculum is a constant challenge to curriculum developers. The imbalances we frequently observe lie in three areas, namely, between knowledge-importing and higher mental processes, between national needs and individual needs and between the cognitive domain and the affective domain. Given the limited amount of material which can be included in the curriculum, there is a substantial risk that over-emphasis on one component leads to a commensurate reduction of the other. Solutions to the problem of maintaining balance call for a vast array of valid studies which should be conducted through the collaborative efforts of all nations in the world.
- When a curriculum is newly developed, all teachers in-service must be trained to familiarize them with the new curriculum and its teaching methods. Since all teachers are required to receive training, it will be unrealistic to hasten to train all of them on an intensive face-to-face basis in a matter of one or two years. Hence, a variety of approaches must be sought with greater reliance on the use of multi-media. In the Republic of Korea, an extensive use of broadcasting media for in-service training is planned to begin in the 1980s.
- The explosion of knowledge which we witness today imposes a continuing pressure for more to be included in the school curriculum. It necessitates choice of what ought to be taught,

and development of criteria to guide such choices. As these questions indicate, curriculum development presents a series of important decisions whose consequences are so far-reaching that they cannot be left to any single professional group of specialists. These important questions will remain unresolved unless a deliberate effort is made to ensure the participation of a wide assortment of professionals and the lay public in the process of development. When a new curriculum is developed, the problem of ensuring its acceptance is not an easy task. If it is to be accepted, we must come up with sound rationales supported by empirical data. This again necessitates a wide range of studies which depend, to a great extent, on the co-operative efforts of all nations in the world.

SINGAPORE

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Context

Singapore became self-governing in 1959, and independent in 1965. It has a population of 2.4 million of whom 76% are Chinese, 15% Malay, 7% Indians and 2% other minorities. There are four official languages: English, Chinese (Mandarin), Malay and Tamil.

The three main goals of education prevailing through the years since self-government are nation-building, bilingualism and education for economic development. At different stages of the country's development, particular objectives and policies reflecting the circumstances of the time have been emphasized; the underlying goals, however, remain constant.

Bilingualism, which underpins both Singapore's national-building efforts and economic development, is a major element of education policy. All pupils study their mother tongue and one other of the four official languages, which in practice means English plus Mandarin, Malay or Tamil. However, pupils are expected to attain bilingual competence only to the extent of their capacity.

The school system is basically a 6-4-2 system, but currently changes are being made to allow pupils to stay longer at any stage if they need it. Under the current system, pupils sit for the following national examinations: the Primary School Leaving Examination at the end of primary school, the Cambridge General Certificate of Education (GCE) 'O' level examination at the end of secondary school, and the Cambridge GCE 'A' level examination at the end of the pre-university course.

Institutional profile

History

In the 1960s, curricular matters, (comprising syllabus specification, curriculum structure and listing of suggested textbooks), were handled by the Textbooks and Syllabuses Section headed by an Assistant Director of Education. Various subject committees were formed and each was made up of about ten specialist-teachers or school principals serving part-time on the committee.

In 1969 the Director of the Research Unit in the Ministry of Education also assumed responsibility for curriculum reform and headed an Advisory Committee for Curriculum Development. This committee then set about revising the syllabi with the help of the various subject standing committees.

When the Professional Wing of the Ministry was reorganized in 1973, the Education Development Division was established. It comprised the Curriculum Branch, the Planning Branch and the Textbooks Branch, each of which was headed by an Assistant Director of Education. The Curriculum Branch had only a handful of professional officers then, one each to look after the main subjects of languages, mathematics, science, history and geography. Much of the work of designing syllabi continued to be done by the subject standing committees. However, the Division undertook to produce an entirely new subject 'Education for Living', comprising the pupils' texts, and the teachers' handbook for the subject. The whole project was completed successfully in 1977.

Due to various rapid developments in education, the Research Branch became a separate Planning and Review Division in 1976, the Textbooks Branch was expanded to include publications in 1977, and the Curriculum Branch also expanded to include the production of instructional materials.

The Ministry of Education was reorganized in 1979, as a result of a study team report. At present, curriculum officers are held responsible for monitoring the implementation of curricula and liaison with teachers. The Examinations Branch has also been expanded to include evaluation and assessment functions besides the service function, and has since been incorporated into the Education Development Division.

Functions

The Education Development Division of the Ministry of Education is responsible for all curriculum activities necessary for the support of all instructional programmes in the Singapore school system.

The functions of the Division fall within the following main areas:

- Development of curricula - curriculum planning, syllabus writing, production of instructional materials;
- Provision of support services to teachers - in-service courses on methodology or assessment techniques, advice on instructional materials and other resources;
- Implementation of projects in schools to support formal teaching - development of school libraries or campaigns to encourage pupils to speak the school languages;
- Assessment of pupil performance - administration of national examinations and the production of special purpose tests.

The main activities within the four areas are:

- Formulating teaching and examination syllabi for all subjects taught in pre-primary, secondary and pre-university levels;
- Preparing supplementary instructional materials, teaching aids, resource lists etc;

- Advising schools on curriculum materials, methodology and learning facilities;
- Developing the professional capability of subject teachers in schools;
- Undertaking research studies, surveys and projects;
- Designing, updating, preparing and organizing examination papers for national examinations;
- Acquiring and disseminating informational materials relevant to the Ministry's activities, including materials for school libraries.

Relations with other institutions

The Ministry of Education functions through its four Divisions - Planning and Review, Administration, Education Development and Schools. Briefly, their functions are as follows: the Planning and Review Division provides back-up services in the form of systems analysis, feedback and evaluation information, data collection and analysis and system and project design for all planning and review activities. The Administration Division administers the Ministry of Education Headquarters, as well as its relations with all external agencies, the admission and placement of pupils in the schools, the development of physical facilities and the provision of personnel for the system. The Schools Division oversees the management of all aspects of school programmes and provides special services to schools such as educational media services, including Educational Television (ETV).

The Education Development Division works in close collaboration with the other Divisions, particularly with the Schools Division. Officers of the Schools Division often provide knowledge of the realities of the school situation and feedback on instructional programmes which are taken into account in the development of curricula and instructional materials or the planning of in-service courses.

Professional staff of the Education Development Division maintain close links with SEAMEO centres such as RELC (which is located in Singapore), RECSAM (in Malaysia), or INNOTECH (in the Philippines). They participate in most of the international seminars, small-scale professional seminars and in-service courses organized by these Centres. Often these Centres are consulted for various aspects of the development of curricula.

The Education Development Division also collaborates with national institutions such as the Singapore Science Council and the Family Planning and Population Board in the organization of various activities which are related to school programmes such as seminars for teachers or displays of resource materials. Professional associations of teachers, such as the Science Teachers' Association of Singapore, are involved in some pilot projects undertaken by the Division. Close consultation between the Division and specialists at the universities and the Institute of Education is also maintained.

Resources and scale of operation

The professional staff comprises 170 persons in all, and accounts for 44% of the professional staff of the Ministry. The majority of the 170 officers are school-teachers or school principals identified as capable or with post-graduate qualifications, while some are lecturers from tertiary institutions.

For the period 1979-80, the Education Development Division's expenditure on manpower was S\$3,498,575 which is 24% of the total expenditure on manpower for the Ministry of Education Headquarters. In addition (but excluding general services, utilities, stationery and most equipment, as expenditure for these items is not borne by individual Divisions in the Ministry) other operating expenditure amounted to S\$655,285 which accounts for 4% of the total operating expenditure for the Ministry of Education Headquarters.

Philosophy

In the colonial era, a rather narrow concept of curriculum prevailed. Curriculum was then conceived as the syllabus content of all the subjects taught in schools or in a general sense as the sum total of the syllabus content of all subjects.

In the early years of self-government, curriculum reform began. This occurred in two directions: first, changing the content of subjects taught, e.g. history and geography, to ensure that common content conducive to the development of a national identity was taught in all schools regardless of the language medium of education, and second, adding new subjects to the curriculum, such as the compulsory learning of a second language in order to implement the national policy of bilingualism. When new subjects had to be introduced or new emphasis had to be given for subjects already taught, as in the case of mathematics and science, appropriate allocation of instructional time to each subject became important. Curriculum then also referred to the pattern of time allocations for subjects at each grade level.

As national development goals were formulated and development forged ahead, particularly in the economic and social sectors, education assumed greater importance. Added to the earlier quantitative goal of providing a place in school for every child, was a concern with ensuring that the education system produced skilled manpower to support the economic policy of industrialization.

Thus, soon after Independence in 1965, a concept of curriculum as strategy for the attainment of larger national development goals had emerged. The main criterion of the value of a curriculum is its relevance to social reconstruction, while other approaches to curriculum design and development are not precluded. Concurrently with this development, the concept of what the curriculum comprises has been expanded to mean not just subject syllabi or time allocation for subjects but also the inclusion of all planned instructional activities within the school. The concept prevalent today sees even

the out-of-class activities, called extra-curricular activities (ECA), such as clubs, associations, sports, etc., as supportive curricular activities and thus really integral to the curriculum.

Curriculum development processes

The stages of the process by which the school curriculum is made to serve national development goals are briefly:

- Articulation of national goals
- Formulation of educational objectives
- Development of curriculum resource structure
- Specification of curriculum objectives
- Development of syllabi, materials and teacher capability
- Implementation of curriculum via teaching in school
- Feedback on effectiveness via assessment of pupil performance
- Review of curriculum objectives and content
- Review of curriculum resource structure

The Singapore education system is highly centralized. Education is funded largely by the Government and the Ministry of Education headquarters plays a prescriptive, regulatory and supervisory role over all aspects of the education system.

Curriculum development activities are the responsibility of the Education Development Division. Educational objectives identified by the policy makers are translated into curricular objectives which will determine the content and teaching of the various subjects. The planning of subject syllabi is overseen by Advisory Subject Committees comprising subject specialists from the universities, teacher training institutions, professional staff of the Education Development Division, school principals and experienced teachers. Subject syllabi are written by the professional staff of the Education Development Division. They are approved by the Curriculum Development Committee, headed by the Director of Education, before publication and issue to schools. Other changes such as those of curriculum structure or pattern of time allocations for subjects are planned by the Education Development Division and approved by the Director of Education and the policy makers.

Supportive activities, mainly in the form of in-service courses or the production of instructional materials, are planned by the Division and implemented with the assistance of teachers or outside experts. Communication between teachers and the Education Development Division is established through a network of committees of senior subject teachers. Schools are grouped into zones such that the senior subject teachers within a zone form zone subject committees. Zone chairmen form a central co-ordinating committee. Feedback on curriculum implementation at the school level, such as the difficulties faced by learners, the needs of teachers, or inadequacy of school curriculum resources, is obtained through subject committees. Evaluative feedback on the effectiveness of instructional programmes obtained in a similar way would form one source of data for curriculum evaluation and review.

Curriculum reviews and evaluation have also become integral to the curriculum development process. Reviews may be set in motion in any one or more of the following ways:

- As follow-up of refinements or modifications of education policies and objectives;
- On the basis of feedback from teachers;
- On the basis of pupil performance;
- As part of the overall curriculum development plan;
- When a subject or part of the curriculum appears to have outlived its significance.

An example of the first type of review is the current re-examination of the subject syllabi for all grade levels as a basis for the development of new syllabi for the New Education System to be phased in from 1980. The incorporation into the English language syllabi for the primary school grades of grammatical teaching points and explanatory notes was a response to the views of English language teachers. The primary mathematics syllabus underwent modification when it was found that pupils could not cope with its demands, and also because of its overlap with the lower secondary mathematics syllabus. The mid-term evaluation of the lower secondary science project was in accordance with the project plan. The group of technical workshop subjects which had been compulsory for all boys and 50% of girls in the lower secondary course since 1969, was reviewed in 1977 when it was felt that one of the underlying objectives - that of popularizing technical studies and blue-collar jobs - had been achieved, and that modification of this part of the curriculum could help to lighten this load.

Issues

Prior to the recent expansion of the Education Development Division, the shortage of professional staff prevented the systematic and speedy writing of subject syllabi. The previous mode of operation was to make members of the subject standing committees responsible for the various portions of the syllabus. Each member forms a working committee of teachers who are in turn assigned units of the portion of the syllabus for which the working committee is responsible. As the working committee members teach full-time in schools, the process of syllabus writing was slow, and co-ordination and continuity difficult to achieve.

The expansion of the Division was a direct response to the need for full-time curriculum developers working as teams on a series of syllabi for a subject. Thus the former subject standing committees are now subject advisory committees and are not involved in developmental work. Likewise, the former working committees are no longer required.

It is well accepted that there are different dimensions to curriculum. The following concepts are relevant:

- The planned or nominal curriculum (that which is set out in time allocations, syllabi and materials);
- The tangible or real curriculum (that version of the planned curriculum which is really taught or delivered to learners and which is determined by teacher capabilities, parental demands, standards set by examinations or other factors);
- The non-formal curriculum (resulting from out-of-class activities not forming a part of the formal instructional programme for a subject);
- The hidden curriculum (learning experience resulting from poor influence or other covert influences, activities or values).

An emerging concern is to reduce the conflicts and the cancelling-out effects of the various dimensions of curriculum. An application of the concepts to the language teaching/learning system in Singapore schools may clarify the issue. The planned curriculum aims at teaching standard British English. English language teachers who are poor models of the language, present deviant local forms of the language, which become in effect the real or tangible curriculum, while the syllabus specifications are 'elevated' to the status of a 'nominal' curriculum. The non-formal curriculum or out-of-class activities may not be supportive of the English language programme, and the persistent speaking of dialects by Singapore Chinese pupils instead of English or Mandarin (the languages taught in the planned curriculum) negates the effects of formal classroom teaching of the school languages. To minimize the negative effects of each dimension would require the formulation of a concerted plan to ensure that all curriculum dimensions work towards the same over-all goal.

SRI LANKA

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Background

Out of a total Sri Lankan population of 14 million, 3.2 million are in formal schools in a 1+5 - 5 - 2 educational system.

		<u>Age</u>
First level	Kindergarten/Lower Grade 1	5 years
	Primary Grades 1-5	6-10 years
Second level	Junior Secondary Grades 6-10	11-15 years
	Senior Secondary Grades 11-12	16-17 years

Teacher strength is 138,000 at present, comprising 20,000 graduate teachers, about 51,000 trained teachers and 30,000 untrained teachers. The pupil-teacher ratio on an all-island basis is about 23:1.

The 9,052 State schools comprise 1,436 senior secondary schools with junior secondary grades also, 4,015 junior secondary schools with primary level grades and 3,592 schools with primary classes. In addition there are 37 private schools, 285 religious schools (pirivenas) and 366 estate schools.

The curriculum

Learning programmes at kindergarten level use playway, activity and informal methods for total child development and formal school preparatory work. At primary level, curriculum reforms involving an integrated and activity-based form of learning-teaching instead of a subject centred curriculum were introduced in 1974.

While in primary schools, reading, writing and mathematics are treated as core subjects so as to ensure functional literacy, numeracy and speech: programmes of learning are not formal and are project- and activity-based and reinforced by the study of eleven themes related closely to the experiences of the child. Early school leavers (those who leave at the end of Grade 5), drop-outs, repeaters (due mostly to absenteeism), ill-health, parental problems, lack of trained teachers, one- or two-teacher schools with 4 to 5 grades, etc., have all been considered in the formulation of the primary curriculum.

In 1973, 450 pilot schools tried out a draft curriculum for Grade 1, which was subsequently implemented in all primary schools in 1974. New curricula for later grade levels have subsequently been introduced, year by year.

Workshops were organized by the Curriculum Division for teachers in the pilot schools testing the new primary curriculum. The tentative curriculum was then revised and developed for formal implementation in all schools on the basis of the evaluation and feedback from the pilot schools.

At the junior secondary level, the course of study is subject based. The Curriculum introduced in 1978 can be analysed as follows:

Languages and Humanities	47% of the time per week	Religion	2 periods
		Medium Language	5 periods
		Second Language	3 periods
		International Language (English)	5 periods
Science Education 30%		Social Studies	4 periods
		Science	5 periods
		Mathematics	7 periods
Aesthetic Education 8%		Music	)
	or	Dancing	)
			) 3 periods
	or	Art	)
	or	Appreciation of the Environment	)
Physical and Mental (Yoga) Health	8%		3 periods
Practical/Technical Subjects	8%	Woodwork/Masonry/ Pottery/Weaving/ Agriculture/Home Sciences/Fisheries etc.	3 periods

The senior secondary level/GCE Advanced level comprises two streams:

- (i) Arts and commerce, which offer a choice of 50 subjects; and
- (ii) Science-physical or biological - a choice from ten subjects in science, mathematics, agriculture and home economics.

Students take four subjects, devoting eight periods (of forty minutes each) per week, to each subject. The remaining eight periods are for national service work, library reading etc.

The Curriculum Development Centre

The Curriculum Development Centre and the branch in charge of Teacher Training Colleges were amalgamated to form the Curriculum Development and Teacher Training Division of the Ministry of Education of Sri Lanka in 1978.

The Curriculum Development Centre has for the last ten years spearheaded all activities connected with curriculum construction, development and evaluation. Implementation programmes have been effected in collaboration with the school administrative sections, and through the thirty educational districts manned by Regional Directors of Education and Chief Education Officers. These district organizations work through 265 educational circuits, each normally comprising about 40 schools, and manned by Circuit Education Officers. These officers, in addition to work connected with the introduction and implementation of school curricula, engage in supervision and organization of teacher-development and orientation programmes and also feed information back to the District Offices and the Centre, on curricular reforms and development. The Curriculum Development Centre attempts to maintain close communication with the circuits and schools through regular discussion at circuit, district and centre levels and also through a system of link-agents - a band of master-teachers in especially the major subjects like science, mathematics etc. Regular in-service courses and study circles are also arranged at the three levels mentioned. Since the Curriculum Development Centre is in control of the disbursement of funds relating to in-service teacher-education course, the progress of work in implementation and change is within its purview. The CDC has a skeleton staff of mostly Senior Education Officers, to man the various units and organize the programme of work at the primary level and in the various subject areas at the secondary levels. Special committees comprising lecturers at universities and teacher training institutes and experienced, successful teachers of the various subjects, work on a part-time basis at the Centre, teacher-training institutes and schools, and formulate curricular material.

The Curriculum Division is responsible for:

- Drawing up syllabi for study in the various subjects and programmes;
- Preparation of teaching guides and appropriate teaching aids;
- Preparation of student work-books;
- Helping the Educational Publications Department in the preparation of school textbooks;
- Conducting in-service training courses for teachers;
- Organizing evaluation work, obtaining feed-back from pilot schools in particular, and revising curricula;

- Conducting special lessons through radio, especially on new curricular material.

Processes

The Curriculum Development Centre did a complete revision of the syllabi for study in Grades 6 to 10 (Junior Secondary Level) in 1978, changing the content where necessary to fall into line with the national developmental goals of the Government. Teacher training and in-service teacher-education work were co-ordinated at the Curriculum Development and Teacher Education Division. There are 24 teacher training institutions in the country with 11,000 teachers in training at present.

Curriculum work, although formally centred on written and factual material, was organized so as to bring to bear the principles, values and processes underlying the content for the active, critical viewpoint of the learner. 'The purpose for which subjects are studied and actions are done' as stated by Aristotle was kept in mind by curriculum developers. What are felt needs of the learner? How effectively can his specific objectives be met? What should he learn? To what extent are curricula of yesteryear relevant, significant and valid? How should the teacher teach? To what extent have the current resources and facilities in the school and environment to be considered? How do the parent and the community get involved with the school and the student in learning processes? These are matters that have been critically considered by the curriculum developers of the Centre.

A special strategy adopted in 1978 to create more interest and involvement on the part of parents and even others not directly concerned with education was to make the draft syllabi for Grades 6 - 10 in the various subjects drawn up by the special committees, open to the public. This was done in August 1978. Copies of draft syllabi were sent to all thirty districts, to education offices and also to the Government Agents' Offices for easy scrutiny by those interested. Even the daily papers carried news and motivated the public. Comments received from teachers and members of the public were studied carefully at the CDC in September/October 1978, and suitable revision made. The final syllabi were printed and sent to schools for implementation from 1979. The writer was responsible for personal direction of this programme. It could be said that the strategy proved a success even in science and mathematics.

Issues

It will be opportune to mention here an innovation in regard to educational development, involving teacher-orientation, local specific curriculum development and community involvement, in the 2,500 small-schools in Sri Lanka. The pupil enrolment in a small-school is less than 100. These schools (28% of the total number of schools) are mostly situated in the underprivileged and less served rural and remote areas. (75% of the population of Sri Lanka is from the rural areas, hence national development is geared more to integrated rural development).

On a study of the work in these 2,500 rural, underdeveloped schools, it was found that although the curricula were carefully planned, prepared and implemented, the results expected and effectiveness desired were not forthcoming, and impact of school curricula on village development was not significant. Drop-outs, repetition, stagnation, non-school-going children and lack of interest by the community were prominent features. The gap between a rural school and the urban school was very wide and becoming wider. Thus, unemployment, low productivity, economic stagnation and migration from rural to urban areas were evident. Most of the villages where these schools were situated had a long cultural history with educational landmarks sometimes going back 2,000 years, thus the villages had to stay and the school to run. On a survey done three years ago, directed by the writer, on the causes of this anti-development of education, it was found that:

- The curriculum content was very often not meaningful or directly related to the school environment, hence revision, at least of operational methods and strategies, was necessary. School terms, timetables, teacher assignments, school supervision, etc. were too rigid and formal. The head teacher had to be the leader of a team, plus organizer and resource person for the area.
- The children lacked educational equipment - books, etc. Since they were from a lower income stratum of society, clothes, nutrition, etc. were constraints.
- Lack of interest and education of parents;
- Poor health of children and mothers in particular;
- Failure of the work of teachers; lack of a real training, dedication and commitment to work in underdeveloped areas;
- Lack of dialogue between supervisors, teachers and the community;
- Irregular attendance, drop-outs absenteeism, etc., girls in particular being kept back when they reached Grade IV;
- Even though the teacher was qualified and dedicated, having to teach 2 or 3 or 4 small classes at the same time is a problem.

Through a special administrative set-up, the 2,500 small schools have since been closely watched, studied and assisted by the Small Schools Units in all district offices. A Central Co-ordinating Unit of the Ministry now works in close collaboration with the Curriculum Development Centre in revision and enrichment of curriculum identification, content and method for these schools.

In addition to special facilities provided for these schools and pupils in the form of educational equipment, stationery, buildings, sanitation facilities, etc., special programmes have been conducted through workshops in all areas, to re-orientate the teacher. At these live-in workshops conducted in the least developed small schools, socio-economic surveys of the villages are conducted, the villagers

are contacted personally and their viewpoints on matters relevant to the development of the school and children and also the development of the village through the school, are obtained and used as base-line data for curriculum development. By this means it has been possible during the last two years to develop a more devoted set of teachers, get communities involved, strengthen curricular material with more relevant content and to get children back into school through more interesting work both in school and out of school. Special curricula have also been drawn up for learning programmes to be conducted for out-of-school youth, mothers and other adults in the afternoons, evenings and nights. In an attempt to develop community involvement on a profitable basis, other aspects that improve production, generate income, improve healthy living etc, were brought into the work programme at the small-school workshop, and thereafter into school with the objective of making the curriculum meaningful, functional and relevant to rural transformation. Personnel dealing with matters such as agriculture, health, cottage industries and social services are brought into the workshops by special invitation as resource personnel. When preparing curriculum content, these sectors have always been consulted. In this manner it has been possible for the Small-School Organization to make the school the base for rural development in very many instances.

Factors needing consideration for preparation of better curricula

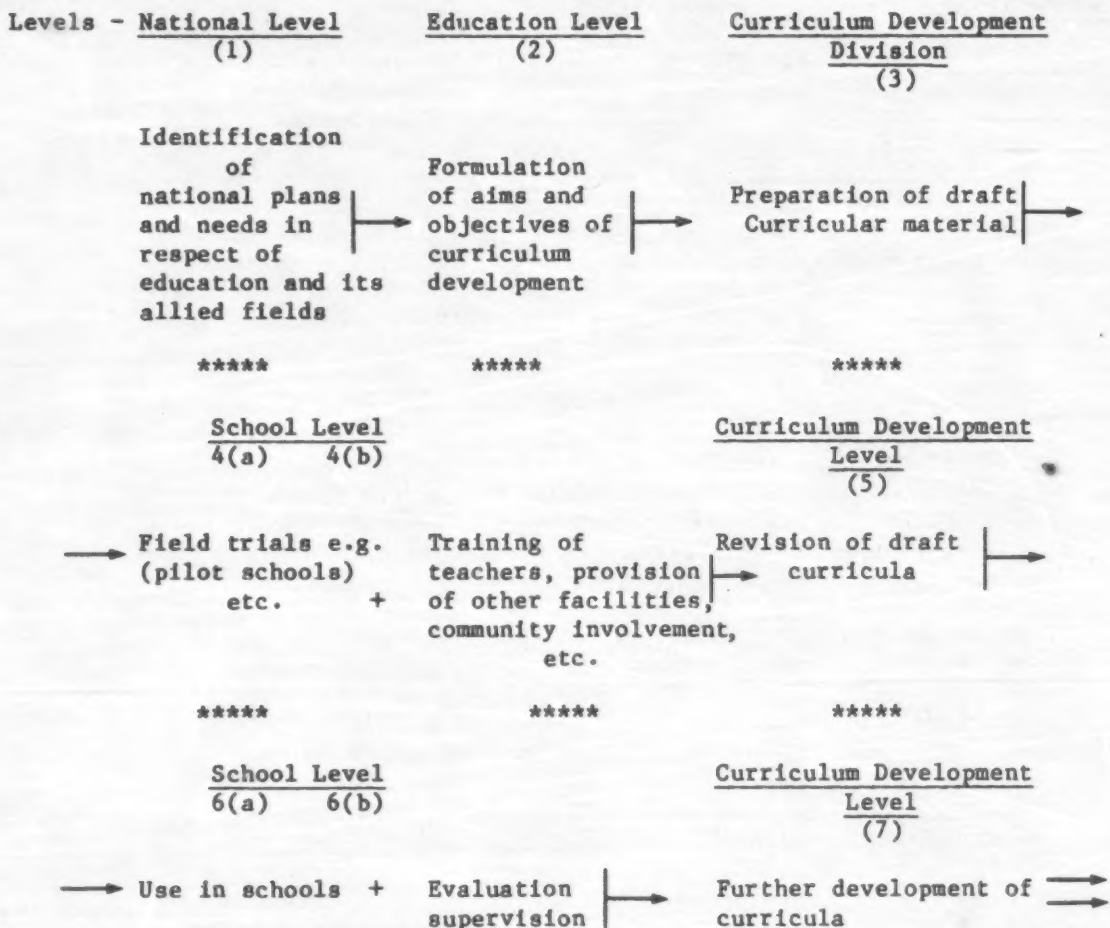
- Curriculum development has to be a crucial component of, and an integral part of educational planning - a very important component in the national development plans of the country.
- It is hence essential that content and methods of action must be related to the needs of the nation, to ideologies proclaimed, to various strata of society, etc. Content will have to be obtained more often from outside the school environment and hence sometimes through non-educationists.
- For efficient implementation of the curriculum so as to attain the desired objectives, allied matters concerning the need for sufficiently qualified teachers, infrastructure in schools, provision of equipment for learners by the school and the parents, proper guidance, supervision and evaluation by the heads of schools and supervisors, etc., need careful attention when producing curricula.
- While the national curriculum gives a great deal of detail on the general framework of subject matter, activities and principles envisaging implementation on a uniform basis at all levels of learning, there is sufficient flexibility for the school or teacher to develop the curriculum on the basis of the immediate environment and resources. The principles and processes involved will have to emphasize affective and other aspects, in addition to the desired cognitive outcomes.
- While traditional curricula will be developed on a subject-centred approach, integration of various subjects and discipline will need to be done on a lateral basis, for example by providing co-ordinated learning opportunities affecting

several subjects - social studies embodying geographical, historical, sociological and economic aspects, for instance.

Here, the vertical relationship in each subject area, during the school career of the child, may cause some confusion unless the co-relation of subjects continues at the same rate yearly in each grade.

In designing a curriculum for rural schools, it is essential that village conditions, psychology and way of life are considered as the life-blood of the content and strategy of action. The curriculum in school and in the community will also have to be work-oriented, productivity-based and income-generating. Teachers will have to be appropriately trained and dedicated if they are to utilize the curriculum to serve the development of the child and the community. Teachers and the community will have to be partners with curriculum developers in designing curricula. A permanent national mechanism is needed at the Centre, but its umbrella must cover those in the field: regular communication and dialogue are essential. The mass media must be made a regular tool.

Some of the above aspects of curriculum design and strategy can be summarised in the following manner:



It is essential that education, which had earlier been considered a social service and welfare activity in National Plans, should be given its rightful place as a sound investment and as an asset to national development. From various State Proclamations and other documents it is evident that this is an accepted fact. However, when it comes to implementation at the grass-roots levels, (be it provision of funds and infrastructure, remuneration or compensation for teachers and others in the field), economists, administrators and others of their kind are constraint personnel and very often overrule educationists. Education needs more than casual and ad hoc treatment at national levels. In Sri Lanka, education has been given due weightage - the third highest expenditure in the national budget is on education.

Provision of satisfactory and sufficient facilities for curriculum development work at the centre and in the field is essential if curricula are to be devised and revised to help in solving national problems like production of skilled manpower, training for self-employment and optimum use of local resources, and to build proper attitudes and infuse a good sense of values to prevent indiscipline, drug-liquor-smoking abuses, etc.

The teacher has to be given time and facilities to assist in curriculum development work as a part of his professional duties. The teacher can undertake revision, trial testing and action research studies, he can use community members in teacher-aid programmes and improvise teaching-learning aids where possible, etc., provided he is properly motivated and trained.

The national curriculum will define activities, subject-matter and principles involved in a general manner, but development will have to be undertaken at the pre-primary, primary and secondary levels in the schools and also out of school, on the basis of the type of school, conditions and area. For example there are developed schools, where the children can supplement their learning activities with the help of their educated parents, mass media, peers and the developed world at large; there are also average schools, where there is a happy mixture of well-served and satisfactorily-served children, with a minority of under-served children; however, there are poor schools with poor children with less qualified teachers and facilities - some are very poor small-schools in normally under-privileged rural areas, where the children, due to socio-economic circumstances, fall out or are pushed out of schools or do not have the capacity to learn because of poor nutrition, health, shelter, clothing, etc. Hence the suggestion that several affiliated subdivisions of the National Curriculum Division be created to attend to curriculum development at these various levels and economic situations needs consideration; co-ordination and maintenance of standards and quality could be ensured by regular dialogues spear-headed by the Centre - at the Centre and in the field centres.

Since the curriculum will have to relate to relevant aspects of national development in all fields, it will be necessary that key health, economics, social, agricultural and industrial personnel be brought in actively as members of an Advisory Board, located at the CDC. The work of such persons would need to be treated as a part of their professional responsibility.

Summary

The curriculum relates to all aspects of a child's life in school. It must be meaningful and relevant to the recipient; the medium - the one who delivers it - must know the content, the reasons and purpose of the exercise. The place of operation - the school and its allied places - must be well planned and prepared for delivery of the goods in such a way as to ensure the desired outcome. Unless all these aspects are suitably recognized, curriculum development work might not result in development of education.

THAILAND

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Context

In Thailand, education is the responsibility of the national Government. School curricula are determined for the whole country by the Ministry of Education, but are sufficiently flexible to allow for variation and diversification at the regional and school levels to meet local needs and situations. The Curriculum Development Centre is a division of the Ministry of Education with the responsibility of developing national core syllabi and curriculum materials for all subjects in primary and secondary education.

Under the National Education Scheme, education is conceived as a continuing life-long process which promotes the quality of life of the citizen, enabling him to live a useful life in society. The emphasis is thus laid upon education primarily as a means to survival, security and happiness for all in the Thai society. The objectives of education are outlined as follows:

- To promote understanding of and arouse enthusiasm in having a part in the governing of the country under a democratic constitutional monarchy, with unfailing allegiance to the nation, religion and moral principles;
- To inculcate a sense of responsibility for the nation, the community, the family and oneself;
- To realize the collective sense of being Thai and being a part of humanity; to have national pride; to bear in mind national security; and to have a say in the protection of the country;
- To uphold equality, integrity and justice;
- To develop good personality, good health and hygiene, both mental and physical;
- To encourage diligence, professional abilities and economy as well as legitimate co-operation in all enterprises;
- To develop a sense of communication, mutual understanding and co-operation; search for truth; creativeness; ability to solve problems and conflicts by intelligent, rational and peaceful means;

- To promote knowledge, understanding and appreciation of sciences, arts, culture, nature, environment and resources.

The second section of the National Education Policy lays down the responsibilities of the State with respect to education as follows:

- The State shall promote and attend to education, having recognized that education has a high priority in its undertakings

The organization of education is the sole responsibility of the State;

All educational management comes under the supervision of the State;

- The State shall make compulsory education universal. State and local educational institutes shall provide education free of charge;
- Educational institutes shall enrol students in all fairness and with due regard to their abilities;
- As to non-compulsory education, the State shall lay down appropriate measures to guarantee a fair and democratic access to education within the framework of relevant legislation and taking into account the individual's ability;

As far as the management of education is concerned, the State shall promote uniformity of the standard of educational institutes, regardless of their location;

- The State shall harmonize educational content with the learning process; moral, ethical and intellectual growth with material growth, and physical growth with mental growth. All these will lead to a proper mode of existence in continually changing circumstances;
- The State shall organize education such that all Thai citizens are able to communicate in Thai in an apt and efficient manner;
- The State shall relate formal education with out-of-school education. It shall also provide appropriate practical education for each level and each kind of education;
- The State shall increase and promote various kinds of out-of-school education in order to make available life-long education.

Institutional profile

Curriculum Development Centre is one of the eight divisions of the Department of Educational Techniques, in the Ministry of Education. The Curriculum Development Division was established by Royal Decree issued on 25 November 1972. There are four sub-divisions in the Centre, namely: Administration, Primary Curriculum Development, Secondary Curriculum Development, Training, Evaluation and Regional Co-ordination and the Population and Environment Education Unit.

The Centre is entering its ninth year of operation. At the beginning, due to the problem of a small number of staff, it played a co-ordinating

role in curriculum construction. Since 1975, with UNICEF assistance and the IDA project, as well as increasing support from the government, the Centre has been more active and has become directly and extensively responsible for most activities in curriculum development.

Resources

In 1980, the Curriculum Development Centre expects to receive government funds of about 16 million baht. In addition to government funds, the Centre receives about 12 million baht per annum from UNICEF for curriculum development for primary schools. The population education project is also receiving international assistance of 64 million baht in the period 1979-1981.

The Centre has a permanent staff of 65 and 16 temporary employees. Their work is supported by several committees and working groups.

Functions

The principal functions of the Centre are the development, trying out (i.e. trialling and evaluation in pilot schools), revision and improvement of all syllabi and curriculum materials below degree level. The Centre also co-ordinates all activities related to curriculum development within the country and at the international level. As one of the APEID Associated Centres, it offers a service to Unesco in terms of common curriculum research, national workshops, arrangement of observation study programmes with the centre and in Thailand, and participation in any Unesco and international activities pertaining to curriculum development.

In order to carry out these functions, the Centre is empowered to:

- Evaluate existing syllabi and curriculum materials and their effectiveness or weaknesses;
- Conduct basic research on needs, problems, learning requirements and teaching-learning conditions;
- Develop syllabi at the national level as well as promote regional and local curriculum diversification and variation to suit local situations and needs;
- Prepare pilot editions of curriculum materials (textbooks, teachers' guides, workbooks, and instructional aids for curriculum try-out projects);
- Conduct try-out and evaluation of the drafts of new syllabi and curriculum materials;
- Design and organize orientation or workshop meetings, and in-service training for administrators, specialists, supervisors, principals and teachers to familiarize them with various stages of curriculum development and implementation;

- Prepare, produce and distribute curriculum materials and teaching aids for curriculum try-out projects;
- Supervize and evaluate nationwide curriculum implementation in order to improve effective curriculum utilization and revision;
- Co-ordinate activities in relation to curriculum development in Thailand and internationally.

Relations with other institutions

Although the Curriculum Development Centre is the body responsible for all stages of curriculum development, the process of development and approval has to proceed through appropriate channels and responsible authorities. Initially, the Ministry of Education appoints a Steering Committee for Curriculum Development which assists the Ministry in recommending guidelines for curriculum policy formulation, for modification of the draft syllabus before submission for approval, for effective improvement of curriculum revision, and for appointment of sub-committees.

At the preparation stage of national syllabus construction, the Centre has to collect data and information from district, provincial and regional educational personnel as well as from various divisions of the responsible departments. The divisions in the Department of Educational Techniques which work closely with the Centre in curriculum development activities are the Textbook Development Centre and the Educational and Vocational Guidance Centre. Other departments in the Ministry of Education involved in curriculum development matters are the General Education Department, the Teacher Training Department, the Physical Education Department, the Vocational Education Department, the Office of the Under-Secretary of State for Education, the Office of the Private School Commission, and the Non-Formal Education Department. Other departments in the Ministry of Education which advise the Curriculum Development Centre are the Fine Arts Department, the Religious Affairs Department and the Office of the National Culture Commission. Since the Ministry of Education assigns the Institute for the Teaching of Science and Technology the responsibility for developing syllabi and curriculum materials for sciences and mathematics in primary, junior and senior secondary schools, the Centre works hand in hand with this Institute.

There are other agencies outside the Ministry of Education which collaborate with the Centre in developing and implementing curriculum. They are the Provincial Administration Authority, the Bangkok Metropolis Authority, universities, the Office of the National Education Commission, the Budget Bureau, and the Office of the Civil Service Commission.

For nationwide curriculum implementation, the Ministry of Education appoints a Steering Committee for Curriculum Implementation. As mentioned earlier, this committee comprises representatives of several departments concerned. The committee assists the Ministry of Education in establishing policy and strategy for effective curriculum implementation, advising on follow-up and evaluating the outcome of work done by the departments responsible for curriculum implementation.

Styles of curriculum development

Thailand tends to use a problem-solving approach in formulating curriculum aims, principles and structures, whereas a conceptual approach is used in preparation of detailed course descriptions. Integration is another guiding principle used in curriculum construction, especially during the preparation of detailed course descriptions and writing of pilot textbooks and teachers' manuals. In practice, identification of needs has been based on analysis of documents from national surveys on problems and needs conducted by adult education and other sources. The Department of Educational Techniques also conducts opinion surveys among educational personnel all over the country. Reports from research by various sources on implementation of the 1960 curricula also contribute useful information on opinions and recommendations for curriculum changes. Furthermore, the guidelines and principles regarding educational development from the Report on Educational Reform in Thailand, the National Economic and Social Development Board, the National Education Plan, and the educational policy announced by the government, are all basic information used for curriculum construction. The problems, needs and recommendations obtained from the sources mentioned above are translated into curriculum aims which are then spelled out as curriculum principles, structures, objectives and course descriptions. Conceptual approaches and integration are applied throughout every stage of curriculum development, as deemed necessary or appropriate.

In the process of syllabus construction, the Centre begins by assessing and evaluating the strengths and weaknesses of the existing syllabi and by conducting both documentation and field research. The second step is formulating aims, principles and structures for the draft syllabus. After the draft syllabus is approved by the Steering Committee for Curriculum Development, a detailed course description is made. Subsequently pilot editions of the textbooks, workbooks, teachers' guide, instructional aids and evaluation criteria are prepared and tried out on either a small or large scale. Training of teachers, principals, and supervisors, is conducted. Orientation meetings are held for relevant educational administrators including regional and provincial education officers, teachers' college instructors, and education officers of the Provincial Administration Authority as well as from the Municipal Authority. During the try-out period, supervision, follow-up and evaluation are made in accordance with a set schedule. All possible means of systematic data collection are utilized as an integral part of summative evaluation for each year, namely, systematic observation, interviews, students' tests, opinion surveys; small group meetings at the schools during each visit, meetings of teachers from various parts of the country (those not involved with the try-out project), and an annual seminar for project personnel. Information obtained from such activities is regularly used to revise syllabi and curriculum materials as well as to improve the process of curriculum implementation and provide the basis for future syllabus development.

In terms of local participation in curriculum development, teachers, principals, supervisors and specialists from various parts of the country are invited to be involved in the preparation, trying out, evaluating and revision of national syllabi and curriculum materials. In addition, Thailand has encouraged regional and provincial education personnel to modify syllabi and curriculum materials to suit local needs and situations. This measure has been steadily fostered by organizing seminars and workshops and calling curriculum personnel assigned to the regional education offices to attend such academic gatherings. Policy, statements on targets, budget, strategies and limitations and sample materials are supplied to the participants. The modified curriculum materials from the regions are sent to the Centre for assessment of their quality. Suggestions and recommendations are fed back to the region for a local try-out. Approval of local curriculum materials normally follows about one year behind the national try-out project and nationwide implementation plan.

In addition to the activities mentioned earlier, Thailand also solicits local participation in curriculum implementation. Prior to the nationwide utilization of the new primary and junior secondary school syllabi (1978), two-day seminars were organized in the north, north-east, south and central areas. In each case, the meeting was attended by the Assistant Governor and Chairman of the Provincial Legislative Council. Other participants were education councillors from Municipality Authorities, the deans of the Faculties of Education of every university, principals of all 36 teachers' colleges, regional and provincial education officers and regional and provincial supervisors. In the following year (1979) follow-up seminars were organized to orientate the same participants to the policies and proposed plans for curriculum implementation.

Issues

In the development stage, the main problem in the formulation of curriculum policy is the lack of clarity and precision of policy and targets in socio-economic matters such as manpower requirements and job opportunities. Administrative concerns centre round, firstly, co-ordination of curriculum development and the implementation of the educational development plan and, secondly, the provision of sufficient resources for the processes of supervision, follow-up research, evaluation and production of curriculum materials both at the national and local levels. Teacher training is also seen as a problem because the provision of an intensive training programme for all teachers is beyond the means of the government. Seminars are held to assist teachers to understand new syllabi and curriculum materials, and teachers' guides are provided to assist in implementation. However, some administrators and teachers see these measures as inadequate.

In order to promote the integration of school and community development in rural areas, the Centre needs to accelerate curriculum diversification and variation, to suit local needs and situations in the area of work-oriented education, at the primary and junior secondary school

levels. There is a shortage of qualified teaching staff in the area of work education, and an attempt has been made to solve this problem by encouraging community people, such as farmers, businessmen, parents, and government officials from other ministries, to assist in school programmes, especially at the junior secondary level.

Plans

To date, Thailand has developed and implemented new syllabi at Grades I, II, VI and VII only. Syllabi for other primary and junior secondary grades have been developed, and implementation of these syllabi is the first priority. In 1981, preparation of senior secondary syllabi and curriculum materials will begin, using the processes described above, but with reduced trialling of materials because of time constraints.

The curriculum implementation plan will include four innovative measures. The first is the production and distribution of a series of simplified and comprehensive teacher manuals. The second is the support of economical but effective curriculum implementation at several hundred 'hub schools', each at the centre of a group of schools. The third is the fostering of a group of 'cadre' resource persons to be the local 'roving' supervisors for a group of schools. The fourth is integrated follow-up and evaluation of curriculum implementation, that is, the production of common evaluation criteria among supervisors and administrators when visiting schools, as well as the sharing of data or information for improving the standard of curriculum implementation.

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GLOSSARY

AC	Associated Centre (of APEID, q.v.).
ACEID	Asian Centre of Educational Innovation for Development, located in Bangkok, Thailand.
APEID	Asian Program of Educational Innovation for Development, based at ACEID, q.v.
BP3K	An Indonesian abbreviation for the Office of Educational and Cultural Research and Development (Jakarta, Indonesia).
CDC	Curriculum Development Centre (Australia, Malaysia, Nepal, Sri Lanka and Thailand).
DR/	Democratic Republic of Afghanistan.
ECA	Extra - Curricular Activities (Singapore).
ETV	Educational Television (Singapore).
GCE	General Certificate of Education (Britain).
IBE	International Bureau of Education. Unesco body, located in Geneva, Switzerland.
IDA	The International Development Association, a UN-related body, based in Washington, U.S.A.
ILO	International Labour Organisation, a UN-related body, based in Geneva, Switzerland.
INNOTECH	A regional centre for educational innovation and technology, established by SEAMEO (q.v.) and located in the Philippines.
KEDI	Korean Educational Development Institute, located in Seoul, Republic of Korea.
MESC	Ministry of Education, Science and Culture, located in Tokyo, Japan (often known as the Mombushō).
NBCT	National Bureau of Curriculum and Textbooks, located in Islamabad, Pakistan.
NCEE	National College Entrance Examination (The Philippines).
NCERT	National Centre for Educational Research and Training, located in New Delhi, India.
NDG	National Development Group. Body set up by each Member State participating in APEID.
NETC	National Educational Testing Center, located in Manila, the Philippines.

NHK	Nihon Hōsō Kyōkai. The Japanese Broadcasting Commission.
NIER	National Institute for Educational Research, located in Tokyo, Japan.
OECD	Organization for Economic Co-operation and Development.
PSSC	Physical Science Study Committee (U.S.A.).
RCM	Regional Consultation Meeting on APEID, q.v.
RCESAM	Regional Centre for Education in Science and Mathematics. Set up in Penang, Malaysia, by SEAMEO, q.v.
RELC	Regional Language Centre, a SEAMEO body, located in Singapore.
SEAMEO	South East Asian Ministers of Education Organisation.
SMSG	School Mathematics Study Group, based at Stanford University, U.S.A.
SOUTELE	Survey Outcomes on Elementary Education. Project of NETC (q.v.) 1975-1976.
SSCEP	Secondary Schools Community Extension Project (Papua New Guinea).
UNDP	United Nations Development Programme.
UNESCO	United Nations Educational, Scientific and Cultural Organization.
UNICEF	United Nations International Childrens' Emergency Fund.

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The Asian Programme of Educational Innovation for Development (APEID) has as its primary goal to contribute to the building of national capabilities for undertaking educational innovations linked to the problems of national development, thereby improving the quality of life of the people in the Member States.

All projects and activities within the framework of APEID are designed, developed and implemented co-operatively by the participating Member States through the national centres which they have associated for this purpose with APEID.

The 21 countries in Asia and Oceania participating in APEID are: Afghanistan, Australia, Bangladesh, China, India, Indonesia, Iran, Japan, Lao People's Democratic Republic, Malaysia, Nepal, New Zealand, Pakistan, Papua New Guinea, Philippines, Republic of Korea, Republic of Maldives, Singapore, Socialist Republic of Viet Nam, Sri Lanka and Thailand. Each country has set up a National Development Group (NDG) to identify and support educational innovations for development within the country and facilitate exchanges between countries.

The Asian Centre of Educational Innovation for Development (ACEID), an integral part of the Unesco Regional Office for Education in Asia and Oceania in Bangkok, co-ordinates the activities under APEID and assists the Associated Centres (AC) in carrying them out.

The aims of APEID are:

- To stimulate efforts in the Member States for the development and implementation of innovations in education, both formal and non-formal;
- To make students, parents, communities, teachers and other educational personnel, aware of the need for relevant changes in education;
- To promote understanding and appreciation of the differences in educational practices and approaches of the Member States.